INTERNET, E-COMMERCE, AND TELECOMMUNICATIONS MARKET OPPORTUNITIES FOR U.S. SMALL- AND MEDIUM-SIZED BUSINESSES

EXPORTIT AFRICA

HIGHLIGHTING BOTSWANA, SOUTH AFRICA, AND SADC

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FOREWORD

This report is one of a series that examines regional telecom/IT markets in Europe, Latin America, Africa, and Asia. It is based on field research and analysis carried out in the spring of 2000 by IT specialist Raymond Cho (Office of Information Technologies) and telecom services specialist Daniel W. Edwards (Office of Telecommunications Technologies) of the International Trade Administration, United States Department of Commerce. They interviewed IT and telecom producers, service suppliers and customers, foreign government officials, regional and trade association officials, and industry experts in Gaborone, Botswana, and Johannesburg, Pretoria and Durban, South Africa. The work was actively supported by Department of Commerce's Foreign Commercial Service (FCS) officials and market specialists in South Africa and by the State Department's economics/commercial officer in Botswana. This report focuses on the status of the telecommunications infrastructure and services and on existing and potential IT industries and markets, with special attention given to factors influencing the adoption of the Internet and electronic commerce in the area. It is hoped that this report will prove useful in highlighting potential commercial opportunities for U.S. telecom and IT firms in an area of the world that is often overlooked and overshadowed by larger and better-known IT and telecom markets where U.S. firms may have been involved for several years.

EXECUTIVE SUMMARY

Southern Africa is a region of tremendous needs, vast potential, and future commercial opportunities for those telecommunications and IT companies that have the vision and commitment to engage themselves in those markets and stay the course. In general, Southern Africa is also an area about which many of us in the United States, including politicians, government officials, and business executives, know too little. Unfortunately, mainstream news reports inevitably focus on conflicts, crises, or natural disasters. Less well understood are the political and economic transformations underway that will bring great changes to Southern Africa during the coming decade. That there remain daunting challenges and problems in the region cannot be denied. That there is a general acceptance there of the urgent need to expand the telecommunications networks and develop creative IT solutions must also be acknowledged.

This report, based upon field research and the insights of local business leaders, African officials, and U.S. Government experts serving in Africa, seeks to lay out some of the current realities and scope for potential activities by U.S. firms in the telecom/IT markets in Southern Africa, particularly South Africa and Botswana. In some respects, South Africa is atypical in that its telecom/IT markets are far larger and more developed than those of its regional neighbors. In other ways, however, South Africa faces many of the same challenges: how to further privatize and introduce competition into its market; how to expand network access to geographical areas and populations with no such access today; and how to develop and implement IT solutions that will promote the social development of all citizens as well as allow businesses to operate more productively. Botswana is also atypical of many African countries in that it has a small population and a relatively high standard of living for a large section of its populace. But it, too, is considering how best to leverage the possibilities of new communications technologies.

Many areas of the IT markets of Southern Africa have yet to be developed. Companies new to these markets will be true pioneers. In many cases, it is difficult to predict just when and to what extent particular IT solutions will work in the marketplace. Again, certain sectors of South Africa's business and residential markets are likely to closely follow currents trends in the IT markets of Europe and the United States. Activities in the IT sector of the South African market, and the markets of other countries in the region, are just beginning to emerge. Electronic commerce, for example, is still an idea, with limited if any real-world applications, in much of that region. But as the telecom infrastructure is rolled out and as use of the Internet takes hold and expands, the market for IT-related products and services will grow accordingly.

In telecommunications, typical opportunities include establishing a joint venture to provide telecom services, often in response to a formal bidding process, and selling all types of telecommunications equipment (switches, optical fiber, satellite earth stations, cellular phones, etc.) to both government-owned and newer privately-held companies. In the IT sector, around 50 percent of Botswana and South Africa's markets are comprised of public-sector sales. There is strong demand for enterprise-class systems and integration services, as well as networking equipment and Internet-related software and services. Growth in the personal computer market for small- to medium-sized businesses remains robust.

For U.S. IT SMEs, local experts suggest that partnering with either an established or new-to-market African firm or systems integrator is one of the best routes to penetrate the market. Other options include the use of agents and distributors for selected products. Regardless of market entry strategy, there are public and private-sector agencies in both Africa and the United States that are eager to assist U.S. SMEs in their market entry endeavors.

CHAPTER 1: SOUTHERN AFRICAN DEVELOPMENT COMMUNITY (SADC)

SADC 1999 / 2000		
Population and GDP	Total Population (millions)	199.7 [1]
	GDP (US$ billions)	$464.4 [1]
	GDP per Capita (US$)	$2325.5 [3]
Main Telephone Lines	Total (millions)	9.0 [4]
	Per 100 Inhabitants	4.5 [3]
Cellular Mobile Subscribers	Total (millions)	2.8 [2]
	Per 100 Inhabitants	1.4 [3]
Internet	Total Accounts (thousands)	724 [4]
	Accounts Per 100 Inhabitants	0.4 [3]

Compiled from: CIA *World Factbook 2000 (GDP data was calculated using purchasing power parities – PPP)*, International Telecommunications Union *ITU Internet Indicators 2000*, Mike Jensen (UN – African Internet Society Initiative)
[1] 1999 data
[2] 1998 data
[3] Figure calculated from latest available data.
[4] Sept. 2000 figure, Mike Jensen (UN - AISI)

INTRODUCTION

The Southern African Development Community (SADC), with headquarters in Gabarone, Botswana, founded in 1980 and reorganized in 1992, is comprised of 14 member states: Angola, Botswana, Democratic Republic of Congo, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe.

The level of IT and telecommunications usage and deployment varies widely within the SADC group. Some countries, like South Africa, Botswana, and Mauritius, are relatively more advanced in their application of information technologies vis-à-vis others like DR Congo or Lesotho. South Africa, for instance, already has nearly one million Internet accounts in use, while Lesotho has about 250. Most, however, have efforts underway to expand telecommunications access and capabilities. For this reason, this chapter will mainly focus on the status of the telecommunications sector within SADC.

TELECOMMUNICATIONS IN SADC: BACKGROUND

African countries are accelerating their communications upgrade programs at such a rate that, within two years, their telecommunications infrastructures could match the sophistication of South Africa's today.

Fred Moturi, Dimension Data.[1]

During the past few years, impressive steps have been taken to set up institutions and adopt recommended policy guidelines for the development of the telecommunications sector in southern Africa.

SADC policy and decision making is conducted through several mechanisms and institutions, including a Council of Ministers, a Secretariat, and sectoral committees and commissions. The coordination of telecommunications issues within SADC is

[1] African Business *"IT Africa" December 2000*

through the Southern Africa Transport and Communications Commission (SATCC). Based in Maputo, Mozambique, SATCC has developed a series of initiatives and projects, including the formulation of a model telecommunications law, several regulatory studies, and the creation of a SATCC database.

Under a SADC Protocol on Transport, Communications and Meteorology, a statement of telecommunications policies and a model telecommunications bill for SADC countries were prepared and approved in June 1998. The policies were approved as a common policy guideline for adoption and implementation within SADC member countries, and the model telecom bill was to guide national legislation for implementing those policies. This development of a harmonized regional policy was viewed as an important step in promoting a number of objectives, including provision of affordable, efficient and high quality telecommunications services; building a competitive regional telecom sector; and creating a supportive environment for the expansion of information and communications services.

The SADC document on telecommunications policies sets out general policies regarding the roles of government, a regulatory body, investors and operators, consumers, users, and labor. Briefly, government is directed to create a favorable environment through liberalization and commercialization of the telecommunications sector. The ministry responsible for telecommunications should be responsible for policy formulation and to see that the needs for universal service are addressed. A regulatory institution should have the necessary independence from stakeholders to ensure impartiality, flexibility and transparency. This independent regulatory authority is to protect the interests of consumers, stimulate investment in telecommunications networks, ensure fair competition among service providers, and promote social goals such as provision of universal access and advanced information services.

Since governmental financial resources for development of the telecom sector are limited, SADC policy proposes that governments should gradually privatize the dominant, state-owned telecom service provider and encourage private sector participation and competition in the market. It is recognized that states will differ in how and at what pace they deal with issues involving privatization and the introduction of competition, but the end-point objective is clear. Finally, the formation of consumer and user groups should be welcomed and governments give them the opportunity to participate in the development of telecommunications. The development of a skilled labor force is also critical to the transformation of the telecom sector. The SADC document also discusses key principles that need to be followed in dealing with the many telecom issues all nations are grappling with, including universal service and universal access; tariffs; interconnection; frequency spectrum; standards; introduction of new services; and encouraging local participation in development of the sector.

Telecommunications Regulators Association of Southern Africa (TRASA)

Under the SADC Protocol referred to above, a forum called the Telecommunications Regulators Association of Southern Africa (TRASA) was established in 1997. Autonomous or independent telecom regulators are eligible to become full members of TRASA. Governments of the SADC countries which have not yet set up such regulatory bodies participate in the activities of TRASA as observers. TRASA seeks to promote the establishment and operation of efficient and

cost-effective telecom networks and services in the Southern Africa region, to co-ordinate regulatory matters and exchange ideas and experiences on all aspects of regulation in the region, and maximize the utilization of scarce resources in telecommunications. TRASA has set up five committees with responsibilities in the areas of licensing and universal service; interconnection and tariffs; numbering and standards; human resource development and empowerment; and frequency planning and advanced services.

TRASA works to implement its objectives through action programs, the current one covering the period 1999-2001. This program contains strategies and actions on influencing governments in the adoption of laws and other measures for development of the telecommunications sector; capacity building for individual regulators; and the development and adoption of regulatory policies and standards as well as best practices. By February 2000, TRASA could point to specific areas of success and where further work was needed to fully implement the current action program.

- Eight countries out of the 14 SADC member states have established autonomous regulatory bodies, while legislation to do so is pending in the parliaments of two other states.

- Efforts to align national legislation with the SADC Model Telecommunications Policy and Legislation continue, but the original deadline of June 2000 has not been met in all countries.

- A survey of skills needs and analysis of human resource needs, as well as setting up a mechanism for skills transfer, has yet to be carried out due to lack of funding. A schedule of training courses will be developed after the survey is completed.

- Studies and workshops supporting the development of regulatory policies and procedures to serve as a model for the operation of regulatory institutions in the region have been undertaken in the areas of interconnection guidelines and a regional radio frequency band plan.

- A TRASA website[2] has been established, and the organization is seeking to set up a special purpose regulatory fund financed from multiple sources.

TRASA seeks to become a consultative and collaborative body of telecommunications regulators that works to advance the development of telecommunications in Southern Africa. It is a new body, as are its regulatory authority members, which are struggling to build institutional capacities and adequate human and financial resources. In the past, funding has been provided by the U.S. Agency for International Development, the International Telecommunications Union and Motorola. TRASA currently is circulating funding proposals to support work on harmonization of regulatory policies and procedures on competition and on interconnection and tariffs. The amounts required are modest, but are essential for helping to finish the creation of appropriate institutions and procedures that will support the growth of a competitive telecommunications sector throughout the SADC region.

The Southern Africa Regional Telecom Restructuring Project (RTRP)

The Regional Telecommunications Restructuring Project (RTRP) was a $15

[2] http://www.trasa.org

million, 5-year program funded by USAID's Regional Center for Southern Africa based in Gaborone, Botswana. The program sought to provide support to the telecom industry in the region to undertake policy reforms and restructuring so as to attract private investment and improve service quality and delivery. RTRP made significant efforts to place short- and long-term technical advisors in the region's telecommunications ministries and regulatory bodies, by providing workshops and training in the United States for Southern Africans to learn about current regulatory and policy options, and to encourage U.S. telecom firms to participate in the region. The RTRP also assisted countries to incorporate the SADC protocol on telecom legislation into their national laws. The RTRP was officially concluded in October 1999. Much progress was made (as noted in the above section on TRASA), but observers note that the institutional telecom framework in Southern Africa is still in a "fragile state."

During the Program, positive activities in the SADC telecom sector were noticeable. Several countries set up independent regulators. One or more cellular operators began services in many of the member states, and more recently, multiple Internet service providers (ISPs) have obtained licenses and are in operation.

In a few countries, initial steps were taken to begin the privatization of the state-owned telecom carriers. The decision to privatize is a political, not a technical, issue, but there is growing acceptance of the proposition that government should no longer manage the telecommunications service provider but focus on creating a regulatory framework and investment climate that promotes private sector participation. Yet universal consensus on this point among politicians and senior policy officials has yet to be achieved. All agree that a major focus on training should be part of the continuing effort to develop and liberalize telecommunications in Southern Africa.

Setting up regional telecom hubs around the region to uplink up with satellites and facilitate voice and data communications within the region and to the rest of the world is an increasingly appealing idea. Practical applications for utilizing new telecom facilities, such as Internet cafes and international money transfers, already are in evidence. USAID wants to continue its involvement in the SADC telecom markets, and there have been other U.S. Government efforts in the same direction.

U.S. Government IT Initiatives

USAID has also been involved in a project known as the Leland Initiative, that seeks to improve Internet access and use in 22 African countries, including the SADC member countries of Botswana, Malawi, Mozambique, Namibia, South Africa, Tanzania, Zambia and Zimbabwe. Assistance initially was directed toward national telecom operators and was in the form of equipment, expertise, training and free circuits for the first year. Support is contingent on agreements to liberalize the market to private sector ISPs, to adopt cost-based tariffing of Internet services and to adopt policies which allow for the unrestricted flow of information. The project also helps set up international gateways to support establishing connectivity in secondary cities in about 10 countries.

The Federal Communications Commission announced the Kennard Development Initiative in June 1999. Its goal is to work with developing countries to build independent regulatory agencies equipped to facilitate universal service through competition, liberalization, privatization and transparency. The FCC is sharing its experience in

independent regulation, open markets, competition, spectrum management, licensing, and cost-based interconnection rates. This regulatory assistance should provide the foundation for the infrastructure investment and deployment that will enable developing countries to participate more fully in the Global Information Society. In Africa, work programs have been signed with telecom regulators in South Africa, Uganda, and Ghana.

The FCC's Africa Initiative was launched in August 1999 during Chairman Kennard's meetings in Southern Africa. During the Work Program with South Africa the FCC has been assisting the regulatory authority (formerly SATRA, now ICASA) on many aspects of the administrative process concerning rulemaking procedures, processing of applications, delegation of authority issues, etc. The FCC has provided the regulator with policy and technical advice, as requested, regarding the expansion of universal access to telecommunications throughout South Africa and will discuss applications to education, health, the environment and the interconnection of libraries through telecommunications.

The FCC has been consulted on a variety of subjects, including methods of promoting competition through interconnection regulatory policy, licensing of telecommunications services, spectrum management and monitoring, information technology infrastructure development, and telecom training, primarily in technical areas.

The U.S. Department of Commerce has developed a long-range action plan for commercial activities development in Sub-Saharan Africa. The keystone of the plan is a pilot program called "Innovation Africa." One goal of the effort is to see that the very best of United States technology is delivered to Africa to help spur continued economic growth. Innovation Africa is focusing on information technology, a sector that holds the most potential in Sub-Saharan Africa and also where U.S. companies are worldwide leaders. In March 2000, staff from the International Trade Administration traveled to Tanzania, South Africa and Botswana to conduct interviews and gather on-the-spot information in preparation for the analyses, assessments and market guide to the current state-of-play in the telecom and IT sectors in Southern Africa for this report. At the same time, work has progressed on developing an IT Management Tool that guides companies and organizations -- both large and small -- in that region through an assessment of their IT needs in view of organizational objectives and resources. This free software tool will be made available to interested parties in the SADC region.

SADC Telecom 2000*

Country	*Internet Accts*	*Cellular Lines*	*Main Lines*
Angola	4,000	10,000	82,000
Botswana	15,000	110,000	109,000
Congo (DR)	200	3,000	25,000
Lesotho	250	10,000	30,000
Malawi	2,400	18,000	47,000
Mauritius	13,000	63,000	305,000
Mozambique	6,000	35,000	82,000
Namibia	3,000	80,000	108,000
Seychelles	2,000	4,000	23,000
South Africa	729,000	5,000,000	7,575,000
Swaziland	1,200	5,000	34,000
Tanzania	600	60,000	160,000
Zambia	6,500	11,000	94,000
Zimbabwe	20,000	75,000	267,000

Source: Mike Jensen (UN-AISI)
*Cellular line data is from 1998 (except for Botswana, South Africa, and the countries profiled below)

Representative Telecom Markets in the SADC Region

MALAWI

Malawi is a landlocked country, slightly smaller than Pennsylvania, that shares borders with Mozambique, Tanzania and Zambia. It

has a population of about 10 million, a GDP per capita of $242, a teledensity of 0.35, and service revenues in 1998 of $33 million. Almost 47,000 main telephone lines have been installed, and cellular subscribership consists of 18,000 users. In 1999 U.S. telecom equipment exports to Malawi totaled $1.56 million, while the bilateral trade in telecom services was valued at $1.4 million.

The Malawi Posts & Telecommunications Corp. (MPTC) is a state-owned company established in 1995, with a monopoly on providing all telecom services. In 1998, a new telecommunications act was passed that established the Malawi Communications Regulatory Authority (MACRA) to regulate broadcasting, telecommunications and postal services and allowed the private sector to provide such services as data communications, value-added and paging services. Presently, cellular services are provided by Telekom Network Malawi (TNM), a joint venture between MPTC and Telekom Malaysia. Malawi's principle ISP backbone is provided by MalawiNet, part of MPTC, and a number of small ISPs are in operation.

In late 1999, MPTC announced it had begun a $58 million project to connect 44,000 new subscribers to the telephone network. To achieve further growth, MPTC has lined up four telecommunications projects aimed at revamping the telephone network, among them are the Northern Region Telecomms Improvement Project, the Blantyre Neighbourhood Improvement Project, and the Malawi Telecomms One Project covering the central region and parts of the south.

MAURITIUS

The island of Mauritius is located in the India Ocean, has a population of 1.2 million, a GDP per capita of $3,660; 305,000 installed main lines, 63,000 cellular subscribers, a teledensity of 21.4; and an annual telecom services market of $126 million. In 1999, U.S. telecom equipment exports to Mauritius totaled $13.7 million, while the bilateral trade in telecom services was valued at $16.6 million.

The national carrier, Mauritius Telecom (MT), provides local and international telephone services; it also offers cellular services, as does Emtel Ltd. The number of cellular subscribers is about 60,000, and the country has about 250,000 main telephones lines in operation. This monopoly will remain with the Government of Mauritius for basic telephony and international gateway operations until 2004. Market access and national treatment are allowed for fax, paging, private mobile radio, and global mobile personal communications services (GMPCS). After 2004, in line with commitments made at the World Trade Organization (WTO), Mauritius is committed to fully liberalizing its telecommunications sector. It also has promised to adopt the set of pro-competitive regulatory principles known as the (WTO) Reference Paper.

The Mauritius Telecommunications Authority (MTA) is currently responsible for the overall regulation of the telecommunications sector in Mauritius, including the licensing of telecommunications operators. The Telecommunications Act approved by the National Assembly in December 1998 provides for the setting up of a new regulatory body whose main functions will be to regulate the telecommunications sector as well as to promote fair competition among operators and to safeguard the interests of consumers. The act also provides for the issue of ISP licenses. However, the terms and conditions governing the issue of such licenses have not been defined yet. The MTA will have the sole right to allocate spectrum, including frequencies for broadcasting.

Mauritius has a better telecommunications infrastructure than most other countries in Africa. The country has adopted a national strategy to become the "Singapore of Africa" and has made telecom and data services a high national priority. The country has a 100 percent digital network, with three SDH fiber optic rings built to improve the local telecom infrastructure and to provide a high bandwidth connection to the main ground-station in Port Louis. MT also operates a VSAT network. Mauritius' international telecom traffic for the year ending 6/30/99 totaled 68.2 million minutes, of which 29.7 million was outgoing. The destination for the greatest number of minutes (20 percent of the total) was France, followed by the U.K. (16 percent), Reunion (10 percent), South Africa (9.3 percent) and India (6.8 percent).

Currently Telecom Plus is the sole Internet Service Provider (ISP) in Mauritius. Telecom Plus was established in 1995 as a joint venture between Mauritius Telecom and France Telecom. Its primary objective is to provide value- added telecommunications services to complement the basic telecommunications services offered by MT. The Government has said it intends to promote competition in the ISP market by granting ISP licenses to private operators on the basis of auction, but this measure has yet to be implemented.

In December 1999, seven international companies submitted bids for a 40 percent stake in state-owned Mauritius Telecom. Bids were received from France Telecom, Telkom South Africa, Portugal Telecom, Telia Sweden, France's Vivendi, Etisalat of the United Arab Emirates, and South Africa's Mobile Telephone Network (MTN). A government document on the privatization says the winner of the tender would come in as a strategic partner and be expected to strengthen the company 's position internationally.

MOZAMBIQUE

Mozambique, a country twice the size of California, with a population of nearly 20 million, extends along the southeast African coastline between South Africa and Tanzania. Its GDP per capita is less than $90, and with more than 80,000 main lines installed, its teledensity is 0.46. Cellular subscribership is about 35,000. Annual telecom service revenues exceed $96 million.

1999 U.S. telecom equipment exports to Mozambique totaled $804,000 while the bilateral trade in telecom services was valued at $3.6 million. During 1999, the country's international telecom traffic total 59 million minutes (almost 39 million minutes incoming). Nearly one-half of its outgoing minutes went to South Africa.

The Telecommunications Law of 1992 established Telecomunicacoes es de Mocambique (TDM) as the monopoly provider of both cellular and basic services. A regulatory body, the National Telecommunications Institute of Mozambique (INCM), was set up and given responsibility for issuing licenses, allocating spectrum and setting standards. Value-added and data communications services are open to competition and licensed by INCM. The regulatory body is directly under the Ministry of Transport and Communications, which appoints its board members. INCM has statutory authority to establish regulations.

In 1999, the Government passed a new telecommunications law that allows for the elimination of the TDM monopoly "at least" five years after it is privatized. Although the law is likely to eventually open the country's telecom sector to higher level of foreign

investment, the pace of change is likely to be slow.

TDM has entered into joint ventures with foreign private companies for the provision of various telecom services. TDM has a majority holding in Telecomunica Moveis de Mocambique (TMM), a company established to manage Mcel, the nation's only provider of cellular services (a GSM system). In addition, TDM holds the majority share in the following companies:

Televisa for external networks (local loop), Teleserve for paging services (TeleBip), and Teledata for data communication and Internet services.

TDM maintains microwave links to Zimbabwe, Swaziland and South Africa. There have been indications that the Government wants to promote more competition in the sector and is considering issuing a tender for a second cellular service provider possibly by the end of 2000.

There are three main links to the Internet; one is a shared 128/1 mbs satellite link at the Eduardo Mondlane University in Maputo (because it is shared, actual bandwidth on the down link is often less than 32 kbps) and another is a committed 192/576 kbps link located at TDM that was installed as part of the Leland Initiative. The third is a committed 512/512 kpbs link to Portugal that belongs to Teledata and also transfers bank data. The largest, a committed 384/768, is an independent gateway established by the most successful of the private ISPs that emerged as a result of the Leland Initiative. This private ISP will be establishing three provincial gateways (64/128) in November 2000. In the fall of 2000, TDM launched the first phase of Mozambique's National Transmision Network that will comprise submarine and terrestrial transmission cables, as well as a network management system. The network will cover more than 1,000 km and will link some of the main towns of the country that are located along the coast.

NAMIBIA

Namibia, a country more than half the size of Alaska, borders the South Atlantic Ocean between Angola and South Africa and has a population of about 1.8 million. Its GDP per capita is $1,615, but the country exhibits one of the world's most unequal patterns of income distribution. With about 108,000 main lines and an estimated 80,000 cellular subscribers, the country's teledensity is 6.0. Annual telecom services revenues amount to $82 million. In 1999, U.S. telecom equipment exports to Namibia totaled $481,000, while the bilateral trade in telecom services was valued at $1.76 million.

Telecom Namibia, a state-owned enterprise created in 1992, has a monopoly on all basic telecom services. It also is the majority owner in the cellular operator, Mobile Telecommunications that operates a GSM network. Namibia's international traffic volume during 1998 amounted to 112 million minutes, of which 61 million were outgoing. Eighty-four percent of outbound minutes went to South Africa.

The Namibia Communications Commission (NCC) was established in 1982 and reports to the Ministry of Information and Broadcasting. The NCC handles general regulatory issues such as licensing and frequency management, but questions have been raised about the effectiveness and independence of the body. It appears, however, that the NCC is not an active player in the telecom sector. The commission reportedly has not been involved when the Government has convened certain telecom policy or regulatory meetings were

held. Nor has the NCC been able to attend policy and regulatory meetings held under the auspices of SADC.

Telecom Namibia has installed a fiber optic network throughout the country and is working on wireless rural telephony. A number of ISPs are operating in the country.

In September 2000, the NCC said it was preparing to solicit bids for a second cellular license. The current and only cell phone licensee is Mobile Telecommunications, Ltd. (MTC), which began operation in 1995. MTC is a joint venture between Talia Overseas AB, Swedfund International AB, and Namibia Post & Telecom. This company currently offers a variety of services (roaming, voicemail, fax and data services) in all of Namibia's major towns and presently has close to 80,000 subscribers.

TANZANIA

Tanzania is located in Eastern Africa and borders the Indian Ocean between Kenya and Mozambique. It has a population of more than 32 million and a per capita GDP of $244. There are approximately 160,000 installed lines and 60,000 cellular subscribers. The country's teledensity is 0.32. Annual revenues from the telecom services market total $110 million. In 1999, U.S. telecom equipment exports to Tanzania totaled $8.4 million, while the bilateral trade in telecom services was valued at $5.75 million.

Legislation passed in 1993 established the Tanzania Telecommunications Corporation (TTCL), which is a wholly state-owned operating company. TTCL operates as a monopoly with international and domestic basic voice services on the mainland. Although TTCL initially was also granted monopoly rights for basic services in Zanzibar, the Government of Zanzibar created the Zanzibar Telecommunications Corporation (ZANTEL) in 1996, which has an operating license for local and international voice and data services both in Zanzibar and on the mainland. ZANTEL is jointly owned by the Government of Zanzibar (24 percent) and by other local and Middle Eastern investors.

Plans to privatize TTCL have been announced. Thirty-five percent of the company is to be offered to private investors. The sale of a minority ownership stake will come with transfer of management control to a strategic international investor. While the expression of interest period for the privatization tender closed in July 1999, an official timetable for privatization has not been set. Oversight responsibility for the privatization lies with the Presidential Parastatal Sector Reform Commission, that has indicated it wishes to negotiate a price cap on basic service tariffs with a strategic partner. In return for making a significant capital investment in TTCL and the country's network, the successful bidder is likely to be given exclusivity in the provision of basic services for a period of three to four years.

TTCL already faces competition from value-added service providers that are operating in Tanzania, where three companies are in business. Three cellular licenses were initially awarded (Mobitel, Tritel, and Planitel), so that there would be two competitors in each of four regions. Recently others have been granted. Mobitel began operations in 1994. TTCL has a 25 percent interest in Mobitel, but is expected to divest that interest as it has received its own cellular license. Millicom International is a stakeholder in Mobitel. Tritel has a Malaysian firm as joint-venture partner.

ZANTEL was licensed to establish its own gateway in Zanzibar, so value-added service

firms (and ISPs) will be able to access that gateway and not be restricted to the one operated by TTCL. There are also three public data service operators. One of them, DATEL, is a joint venture with TTCL as a partner. The data service providers also may bypass TTCL for their international services. Four firms have licenses to provide national radio paging services.

Foreign ownership up to 51 percent is permitted in any of the non-basic telecom service categories, although in the past, such requirements have been waived, and some value-added service firms were allowed 100 percent foreign ownership. However, license applications are still subject to a 35 percent local participation requirement for approval.

ZAMBIA

Zambia is a landlocked country, slightly larger than Texas, and situated between Angola, Botswana, Zimbabwe, Mozambique, Tanzania and the Democratic Republic of the Congo. It has a population of about 10 million and a per capita GDP of $464. There are 94,000 installed telephone lines in the country (a teledensity of 1.1) and about 11,000 subscribers for cellular services. The value of the telecom services market is $102 million, and investment in the sector in 1997 totaled $11 million. In 1999, U.S. telecom equipment exports to Zambia totaled $1.8 million, while the bilateral trade in telecom services was valued at $5.3 million.

Zambia Telecommunications Ltd. (Zamtel) was established as a government-owned corporation under a 1994 national telecommunications law. Zamtel provides switched telephony services. Zambia's international traffic totaled 32 million minutes in 1999, of which 16 million were outbound. Thirty percent of outbound traffic went to South Africa; 15 percent to the United Kingdom; 11 percent to the United States, and 10 percent to Zimbabwe. In order to expand its network, Zamtel has installed a Motorola WiLL system around Lusaka and a VSAT-based rural domestic satellite system using the INTELSAT network. Zamtel also offers mobile services in competition with Telecel Zambia and Zamcell. U.S.-based Telecel International has a majority ownership in Telecel and has a CDMA network. Zamcell has a GSM network; there are reports that the two firms may eventually form a partnership. Despite the fact that the new cellular companies imported their own equipment under the guarantee that they would be allowed to operate it themselves, both Zamcell and Telecel are required to use Zamtel's switching facilities, which raises their costs considerably. In addition, they often are unable to secure the number of lines they need to handle their customer requirements. The new GSM network was recently bid and won by Mitsui.

A regulatory body, the Communications Authority was provided for under the 1994 law and is functioning. Some observers believe it has not yet established itself as a fully independent and effective institution.

Data communications and leased line services are open to competition, but companies providing such services do so mainly around the Lusaka metro area. Zambia first got access to the Internet through ZamNet, a private company operated by the national university. Zamnet, Zamtel and Coppernet currently provide Internet services. Satellite bandwidth is provided by PanAmSat.

In 1999, the Government of Zambia published a policy framework paper with the IMF that outlined a strategy for continued economic liberalization and the commercialization or privatization of Zambia's remaining parastatal companies. The plan called for the sale of a

minority share holding (probably about 20 percent) in Zamtel, along with management rights. Later, the Zambia Privatization Agency published a tender inviting pre-qualification bids from foreign telecom firms to acquire a 20 percent minority interest in Zamtel plus overall operational management and asked for responses by March 21, 2000. Since then, there has been little activity. An independent British contractor may do an assessment study, but the government appears to tie further progress on privatization to debt relief and many donor assistance agreements.

ZIMBABWE

Zimbabwe, a country slightly larger than Montana, is surrounded by Botswana, Mozambique, South Africa and Zambia. It has a population of 11.5 million people and a per capita GDP of $712. There are 267,000 installed lines in the country (a teledensity of 1.72) and about 75,000 cellular subscribers. Annual telecom service revenues are nearly $140 million, while investment in the sector was $132 million in 1996. In 1999, U.S. telecom equipment exports to Zimbabwe totaled $4.75 million, while the bilateral trade in telecom services was valued at $9.9 million. While the basic telecommunications law for Zimbabwe dates to 1970, amendments were passed in 1996. Those amendments, however, did not provide for an independent regulatory body or for liberalization of the telecom sector. The Ministry of Information, Posts and Telecommunications prepared a draft Communications Bill that was introduced in Parliament in 1999. The bill would open the sector to some competition and set up an independent regulatory agency. Under the legislation, steps will be taken to partially privatize the Post and Telecommunications Corporation (PTC), which is expected to remain the sole provider of basic services for a five-to-ten year period.

The PTC is government-owned and the monopoly provider of basic telecom and value-added services. PTC handled 106 million minutes of international traffic in 1998, evenly divided between incoming and outgoing traffic. Destinations for outbound traffic included South Africa (43 percent of total minutes), the United Kingdom (8 percent of the minutes), the United States (6 percent), and Botswana (5 percent). PTC is pursuing a network expansion program that has resulted in fiber optic cable being installed in Harare and Mutare, while digital lines are being planned for the provinces. The country's international connections are generally by satellite.

Cellular service is offered by PTC through its Net*One subsidiary, while Telecel -- Zimbabwe and Econet also hold licenses. Both companies are required to lease satellite space or time from PTC for their cross-border traffic. The existing telecommunications bill requires all incoming and outgoing telephone traffic to be routed through PTC. Banks and mining companies have set up VSAT networks, while Zimbabwe Railways operates a private VSAT network.

MANGO, a cooperative of local and international NGOs, established Zimbabwe's first link to the Internet in 1990 and continues to provide low cost e-mail service. Six ISPs are offering service: Samara Services, Data Control, Africa-Online, Inter Data, Zambezi Net and Prime Net Communications. Any business, including foreign-owned companies registered with the Ministry of Industry and Commerce can apply for and usually receive an Internet franchise that allows it to become an ISP. The company must then enter into a contract with the PTC. ISPs are not allowed to operate their own telecom switches or international gateways.

CHAPTER 2: BOTSWANA

BOTSWANA 1999		
Population and GDP	Total Population (millions)	1.6
	GDP per Capita (US$)	$3,900
Main Telephone Lines	Total (thousands)	109 [3]
	Per 100 Inhabitants	6.8 [2]
Cellular Mobile Subscribers	Total (thousands)	110
	Per 100 Inhabitants	6.9 [2]
Personal Computers	Total (thousands)	40 [1]
	Per 100 Inhabitants	2.55 [1]
Internet	Total Users / Accounts (thousands)	20 [1] / 15 [3]
	Users Per 100 Inhabitants	0.6 [1]

Source: CIA *World Factbook 2000 (GDP data is PPP)*, International Telecommunications Union *ITU Internet Indicators 2000*, Mike Jensen (UN – African Internet Society Initiative), U.S. Embassy in Gaborone
[1] 1998 figure
[2] Figure calculated from latest available data.
[3] Sept. 2000 figure, Mike Jensen (UN-AISI)

Note: "Batswana" is the plural form used to describe the residents of Botswana.

THE OVERALL IT MARKET AND INDUSTRY

Botswana is fertile ground for IT and telecom sales

Botswana, located north of South Africa, borders Namibia, Angola, Zambia and Zimbabwe. The country is about the size of Texas, and part of it is taken up by the Kalahari Desert.

The New York Times reported in 1998 that the World Bank had identified Botswana as the country with the greatest rate of economic growth in the world from 1966 to 1997. Its average annual growth rate of 9.2 percent exceeded that of South Korea (7.3%) and China (6.7%). In 1998 and 1999, strong growth rates continued as Botswana's economy grew by more than 8 and 6 percent respectively, leading to a per capita GDP of about $3,900[3] in 1999. Although the Asian financial crisis and the resultant downturn in global diamond markets -- the mainstay of the Botswana economy -- had affected economic performance somewhat in 1999, the longer-term outlook remains positive.

Sales of computer hardware and software products increased from $20.9 million in 1997 to $26.2 million in 1999[4]. Nearly all of this was in the form of imports, with U.S. products comprising the largest share. Many IT goods are first shipped to South Africa and then sent to a Botswana distributor for resale. The Botswana IT market is estimated to grow at an annual rate of 10 percent. As in South Africa, the rate of IT uptake is high. If a small- to medium-sized business is going to invest in an IT solution, then they tend to invest in the latest solutions within their price range. Trends map well to those in South Africa, which in turn lag Europe and America by up to two years.

Botswana has 109,000 main telephone lines installed for a teledensity of about 6.8 and additionally boasts 110,000 cellular subscribers. Annual telecom service revenues exceed $150 million. 1999 U.S. telecom

[3] CIA World Factbook 2000.

[4] Botswana Country Commercial Guide 2000.

equipment exports to Botswana totaled $2.0 million, while the bilateral trade in telecom services was valued at $2.2 million.

The government, including parastatals such as Botswana Telecom, is a major buyer of IT solutions. Public sector spending is about 60 percent of IT sales in Botswana. Efforts are underway to connect administrative centers and departments to the Internet and the government is setting up vocational IT training centers. In the corporate sector, particularly among financial and mining companies, there is increased interest in enterprise resource planning (ERP) solutions.

There were roughly 2.55 personal computers for every 100 Batswana in 1998, which was substantially lower than South Africa's 4.74 and an order of magnitude lower than the 50 PCs per 100 Americans[5]. Many users are students who rely upon computers located in educational institutions or in Internet cafes as opposed to private homes. There are usually multiple users per computer and Internet account, so the low number may not represent typical patterns of usage. About 75 percent of the population is under the age of 25. Small businesses also make up a large number of Internet users. Botswana's low rate of computer penetration, given the country's relatively high disposable income, indicates a market that is far from saturated.

The economy intimately linked to that of South Africa

Botswana's economy is highly dependent on South Africa. Only 1.57 million people live in Botswana, a population about forty times smaller than in South Africa. Roughly 75 to 80 percent of Botswana's imports come from its much larger southern neighbor, including products that are not originally from South Africa but are re-exports. Goods move back and forth easily as both countries are members of the Southern African Customs Union (SACU). The South African currency, the Rand, is for the most part easily exchangeable with the Botswana Pula[6], and there is a great deal of cross-border shopping. Botswana is, by African standards, an affluent country. The per capita GDP is among the highest on the continent and compares well with China and the Philippines.[7]

HIV/AIDS is a major problem

Unfortunately, Botswana and South Africa share more than a border; they both have extremely high rates of HIV/AIDS infection. It is estimated that about 290,000 Batswana are infected with the virus, which is equivalent to 36 percent of the adult population.[8] How this epidemic will affect future economic growth in the country is unclear.

Botswana is open to foreign investment [9]

The World Economic Forum has placed Botswana third on the continent in overall business competitiveness both of the times the organization has compiled such rankings.[10] The government seeks to promote business and is committed to helping foreign companies invest in Botswana. Foreign exchange controls have been eliminated; crime and corruption are relatively low; and the regulatory system is transparent. Foreign investors are allowed to participate in all IT sectors and equal treatment is accorded to both foreign and domestic investment. There are no formal barriers that

5 ITU *Challenges to the Network 1999.*

6 It now costs 1.38 Rand to buy one Pula. The Pula has appreciated against the Rand by 5.4% in 2000.

7 Using GDP numbers from the CIA World Factbook 2000.

8 Philadelphia Inquirer, July 10, 2000

9 For more information on investment, trade agreements, conversion and transfer policies, IPR, taxation, and trade regulations, please refer to the Botswana Country Commercial Guide 2000. Visit http://www.usatrade.gov to obtain a copy in PDF format.

10 World Economic Forum *Africa Competitiveness Report 1998-1999 and 2000-2001*. Botswana ranks after Mauritius and Tunisia.

could cause an impediment to investment, limit competition, or protect domestic interests at the expense of foreign firms.

The Botswana Export Development and Investment Agency (BEDIA) was recently created to act as a "one-stop shop" in assisting foreign investors to overcome bureaucratic delays and minimize red tape. BEDIA will help investors obtain work or residence permits, get the required licenses and other regulatory authorizations, and even provide start-up grants. Longer-term investment financing can be obtained from both the Botswana Development Corporation and the National Development Bank.

TRADE AGREEMENTS

Botswana is a member of the World Trade Organization (WTO) but is not a signatory to its Information Technology Agreement, which lowers tariffs on a range of IT products, or its Basic Telecom Agreement. A number of bilateral trade agreements have been signed with China, Korea, Russia, and other nations that provide for most favored nation treatment. More importantly, Botswana is a member of the Southern Africa Customs Union (SACU), which eliminates duties on goods moving between five different countries in the region with a common set of external tariffs on goods entering the Union. Botswana is also a member of the Southern African Development Community (SADC), an organization of 14 countries that is currently negotiating a free trade agreement. As Botswana is a landlocked country with a small domestic market, its economic future and ability to attract foreign investment hinges on providing cost-effective access to a greater market beyond its borders.

REGULATIONS

Royalties and license fees are freely transferable

Botswana has abolished exchange controls, and there are no restrictions on repatriating profits, service fees, returns on intellectual property, and royalties. However, a form provided by a commercial bank must be completed with each transaction (forms A and S for outward and inward transactions, respectively).

Localization

English is the official language of government and business in Botswana, although Setswana is the first language of most Batswana. There are no official localization requirements for software and IT products.

Standards

Botswana is a member of the International Organization for Standardization (ISO), which is the body responsible for developing standards in all technical fields except for electrical and electronic engineering. All computer equipment (imported and local) should comply with the following ISO standards administered by the Botswana Bureau of Standards.

- CISPR 22: Radio disturbance characteristics of information technology equipment.[11]
- IEC 60950: Safety of information technology equipment.[12]

Intellectual property

Botswana became a member of the World Intellectual Property Organization (WIPO) in 1998 and has also recently enacted legislation to comply with the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) at the WTO. Current laws, however, do not fully protect intellectual property such as computer software. The government has yet

[11] CISPR 22 specifies the limits of radio frequency emissions which appliances and other electrical equipment are allowed.

[12] IEC 60950 specifies requirements intended to ensure safety for the operator and layman who may come into contact with the equipment and, where specifically stated, for service personnel.

to implement several provisions of its own Industrial Property Act of 1997, including the establishment of a patents registry. Botswana currently only recognizes patents registered in the United Kingdom and South Africa.

Taxation

Botswana is considered to have some of the lowest tax rates in the region. The corporate tax rate is 15 percent with a 10 percent additional company tax. Manufacturing and financial services companies pay a single concessionary tax of 15 percent. The maximum marginal rate of income tax is 25 percent. There is a 10 percent sales tax except for food, construction materials, capital goods, medicines, books and stationery, which are exempt. There is no legislation on sales taxes for E-Commerce transactions, but ostensibly existing sales taxes on purchases would apply.

TELECOMMUNICATIONS

The Botswana Telecommunications Corporation (BTC)

The state-owned service supplier, Botswana Telecommunications Corporation (BTC), was established in 1980 and was the only telecom operator until 1996, when two cellular joint firms were set up. Botswana's finance minister recently announced the government's intention to privatize BTC, although specific details have not yet been revealed. That process is expected to be underway before the end of 2000. The National Assembly has adopted the Minister of Finance and Development Planning's draft White Paper on Privatization. The main thrust of the policy would be to bring about optimal efficiency in the provision of public services by attracting private capital flows, managerial expertise and technical skills. It would provide an institutional and legal framework for privatization of parastatals like BTC. In addition, the policy aims to provide an opportunity for Botswana citizens to participate in the ownership of parastatals.

BTC has extended its network to cover most of the populated areas of Botswana. Rural communications are enhanced at remote sites around the country through the provision of service at breakout points along the backbone route. This fully digitalized backbone is being utilized to provide a range of services, including value-added networks, pay phones, data services and leased lines, that utilize new technologies. During the last two years, BTC has turned to wireless technology to speed up service delivery, with about 7,000 lines currently connected in this way. A nationwide network of 2,500 pay phones has been installed. Over the next few years, BTC's entire network will be upgraded to Synchronized Digital Hierarchy (SDH) technology. BTC is also introducing frame relay services and ISDN services. A White Paper on the privatization of BTC has been prepared, but no time schedule has been announced. Some observers believe the process will be well under way before the end of 2000.

The telecommunications regulator

In 1996, legislation was enacted that established a regulatory authority and deregulated some market sectors, such as customer premises equipment and value added services, and opened the cellular market to private operators. There are no foreign ownership restrictions in the Act, although regulatory authorities encourage teaming up with local firms. The Botswana Telecommunications Authority (BTA) was established in December 1996 and began licensing operators the following July. BTA approves the prices BTC charges for access lines and national telephone calls. BTA is also charged to ensure the rational use of the radio frequency spectrum in the country.

Besides licensing telecom operators, BTA ensures universal access to telecommunications services throughout Botswana, type approves telecom equipment connected to the public network, promotes and maintains competition, guided by competition rules specified in the Telecom Act, and operates as a quasi-judicial body to settle disputes between users and operators and among the operators themselves. BTA also advises the government on general telecommunications policies, and a new Broadcasting Act has relieved BTA of some of its powers over broadcasting. BTA has five members of the Board appointed by the Minister of Works, Transport and Communications. A government grant supplemented by service and systems license fees provides the budget for the agency.

Satellite, cellular, and ISP services

BTA has signed the ITU's Memorandum of Understanding on Global Mobile Personal Communications by Satellite (GMPCS) designed to facilitate free movement of terminals (phones) on a transitory basis with the signatory administrations. BTA is, in principle, prepared to grant GMPCS licenses based upon a favorable review of necessary information provided by the applicant. BTC is building its own VSAT hub that will ensure point-to-point connectivity via satellite to all customers in the southern Africa region. The Government granted its first five-year satellite licenses to mobile phone companies in 1998 and does not plan to re-open the bidding until 2003. U.S. companies desiring to enter the market would have to go through the current license holders. The Government has established a subsidiary, Botsnet, as an ISP that is offering commercial services in competition to other ISPs.

In 1997, BTA was called upon to settle a dispute involving the two cellular operators and BTC, as they had failed to conclude a voluntary agreement concerning the appropriate interconnection and leased line charges. BTA issued a ruling that was to be effective until early 2000. Competition in mobile cellular services was introduced in 1998 with the licensing of two operators, Mascom Wireless, a joint venture between Portugal Telecom International, T.X. Masiyiwa (Zimbabwe-based) and local partner DECI Holdings and Vista Cellular, combining France Telecom (51%) with several local partners. Each license covered approximately half of the country, and both operators were required to offer services in and around the capital city, Gaborone. Once the operating company completed network construction within its initial operating area, it could expand its network throughout the country. Botswana uses a calling-party-pay billing scheme.

The cellular market can be divided into three segments: one to two percent of the population that is wealthy and buys multiple phones; 10 to 12% that earn monthly salaries of from $900 to $4,000 and are solidly "middle class;" and 85% of the population that earns $100 or less a month and makes up the prepaid market for cellular calls. Although the market is less than two years old, growth has exceeded all expectations, so that the number of cellular subscribers now exceeds the number with service from the fixed-network operator (BTC). In the future, the cellular networks may tie in with global satellite networks and provide high speed international data links.

There are still challenges ahead in this sector

People we spoke with raised a number of issues and challenges facing the Botswana telecommunications sector. They are not unique to Botswana, but are similar to those confronted by other countries that seek to rapidly develop their telecommunications and

IT sectors. How these issues are addressed will have a direct bearing on the future development of the industry. Comments heard most frequently, or that seem to identify key areas that bear watching, are noted below. The authors of this report are not necessarily endorsing all points noted, nor recommending specific solutions, but deem it useful to report some of the views we heard. For a balanced development of telecommunications can best occur when government, public and private telecom operators and users (residents and businesses) agree on the key problems that must be addressed and then work together to come up with appropriate strategies to accomplish that goal.

- BTA has a critical role to play in ensuring the future growth and success of Botswana's telecom market. It needs to have the necessary financial and personnel resources to operate competently and efficiently. All recognize that BTA must operate independently of BTC, and BTA is seeking to become a self-financing organization. On some issues, BTA clearly has asserted its independence, but it is yet to be seen how effectively and expeditiously it will be able to deal with key issues such as new interconnection agreements, tariff rebalancing and promoting fair competition among ISPs. This scenario exists in all countries that have only recently established separate regulators and are seeking to privatize the monopoly or former monopoly carrier and introduce some competition in the marketplace. Strong policy guidance from the Ministry in favor of increasing competitive forces and private sector participation in the market can strengthen the mission of BTA and provide important support for the tasks it confronts. BTA has a continuing need to develop a skilled staff with expertise in the many technical and regulatory issues that will come before the Agency.

- BTC can take much credit for its efforts in developing the country's communications infrastructure. However, there are questions about its future role and direction. Some express concerns about BTC's ability to satisfy unmet demands for service and its willingness to see that other service supplies, which are current or potential competitors, are provided the facilities needed at reasonable rates and in a timely fashion. BTC is seen as exerting too much influence in the policy and regulatory arena when its financial interests are at stake. The decision to begin privatizing BTC is widely praised as a good first step toward reform.

- Botswana has one of the best national telecom networks in all of Africa. Fiber rings and digital microwave assure good long distance communications; however, the network's weakest link is the poor quality of the local networks. Leased line costs are very high. For Botswana to reach its goal of becoming a financial services center, it needs to ensure that favorable conditions exist to encourage the rapid expansion of the network, growth in its capacity, and the introduction of new and advanced telecom services. Some express doubt whether these goals can be achieved unless changes are made in the current industry structure.

INTERNET AND E-COMMERCE

Use of the Internet is in its early stages in Botswana, with roughly 15,000 Internet accounts, although some estimates place the total user population as high as 20,000. The single biggest user is the University of Botswana in Gaborone, and it is possible that many students and faculty share accounts. The government is aware of the importance of getting its citizens online, but there is no formal national information infrastructure planning process. Increased home dial-up access is held back by both the lack of PCs and metered local calling. Business use is rising, and government agencies are gradually getting connected.

Despite its good telephone network, Botswana was one of the last countries in Southern Africa to establish access to the Internet. Initially, BTC took the position that it should be the sole provider of Internet services. But routing all data links through its network made Internet connectivity quite expensive. The policy has since been changed, and BTC provides backbone Internet service, which is then sold to a number of private ISPs for resale to dialup customers. ISPs and other carriers providing Internet access and services are allowed to establish and operate their own switches including international gateways. ISPs negotiate their interconnection with BTC. BTC has set up its own ISP, Botsnet, that has been established as a separate subsidiary. Other ISPs are concerned that Botsnet may gain competitive advantages through its association with its parent, BTC, still the dominant provider of voice telephony.

Awareness of E-Commerce is just beginning in Botswana. Most local ISPs are mainly just offering e-mail and Web access to individuals, not E-Commerce solutions. Businesses in Botswana are accustomed to physical interaction and documentation as opposed to that of the virtual variety. Banks are not equipped to offer services over the Web, although there is online banking experimentation in progress.

Business-to-consumer (B2C) E-Commerce is essentially nonexistent. Very few Batswana purchase items over the Web, although there is a high level of disposable income and parcel delivery is efficient. ATM and debit cards are extensively used, with credit cards not as popular. Gaborone has a good "bricks-and-mortar" retail infrastructure, with large discount warehouses and "big box"-type stores. Many Batswana cross the border to do their shopping, and there are no customs duties on items purchased in South Africa although sales taxes do apply. The Internet user base is still too small in Botswana for there to be credible B2C E-Commerce. Physical retail is unlikely to be displaced anytime soon.

Business-to-business E-Commerce is small but growing. Many large businesses in Botswana, mostly subsidiaries of South African or multinational companies, are implementing sophisticated IT and network solutions. Virtual Private Networks (VPNs) are gaining in popularity. However, for the most part B2B does not appear set to become a highly significant method of conducting business.

There is currently no legislation specific to E-Commerce, although there is an awareness on the part of government of E-Commerce issues.

OPPORTUNITIES

While Botswana is still a tiny market on its own, if taken within the context of a regional or continent-wide market, it becomes a very attractive place to do business. There is a strong private sector and corruption is not regarded as a problem. There are incentives for manufacturing industries, but none for service firms. While there is need for more

skilled workers, many young people are studying abroad, as well as at the local university, and will be able to find good jobs upon their graduation. The Government has made funds available for IT training, although the sector is at the initial stage of development.

Many large multinationals have established a presence in Botswana, either as a distribution base or a manufacturing center. Major investors include Hyundai Motors, Owens-Corning, H.J. Heinz, De Beers, and Caltex Oil. The highly pro-business stance of the government, relatively low corruption and crime rates, and its proximity to South Africa and a greater SADC market of over 200 million have all combined to make Botswana a major investment draw.

There are relatively low levels of IT saturation in both public and private sectors. Many organizations are examining IT and the Internet for the first time – creating good "greenfield" opportunities for American companies willing to look long-term. The government is actively upgrading and modernizing administrative systems. Increased economic growth after the 1999 slowdown should drive both consumer and corporate spending on PCs, cellular phones, and other products. The high and rising level of cellular phone use may in turn help promote use of the Internet via WAP-enabled handsets. Wireless content provision, such as news and sports scores, is another possible area of business opportunity.

Botswana's telecommunications infrastructure is one of the most modern in Africa. Increasing customer connections and expanding the network are high priorities of the BTC. The company intends to increase the number of direct exchange lines to 214,000 by the end of 2003. With the rapid growth of the two cellular phone operators, there are good sales prospects for cellular phones. BTC is also expected to double the existing network of cellular numbers in the next three years.

The telecommunications industry has a potential to purchase such telecommunications products as feature and cordless phones, car phones, and pocket service phones. U.S. businesses normally access the market through joint ventures with either the Botswana Telecommunication Corporation or local investors, although this route is not mandatory. Sales to the BTC have been dominated by European firms due to European government assistance and Botswana's technical standards. Botswana's telecom equipment market was estimated at about $17 million in 1999, with U.S. exports accounting for less than 2 percent of the market.

The general conditions for direct foreign investment by U.S. firms appears very favorable. The Government of Botswana is in the enviable position of being able to create comparative advantage through its development policies, and already has created political stability, a reliable infrastructure and financial inducements including a 25 percent corporate tax rate and a freely convertible currency. While a high level of transparency and access for U.S. investors in the proposed privatization of BTC can be anticipated, further clarification is needed regarding the format of the government's initiative to encourage local participation in the privatization process

Relationships count

Botswana is a market in which relationships count for a great deal. Although many U.S. companies work through distributors and resellers, it is still important to foster direct ties with local businesses and organizations. American companies interested in Botswana should also be focused on the long-term potential of the market. Loss on initial investment or market entry is not uncommon.

Companies looking at setting up a local presence must allocate for possible loss in their entry strategies.

Use Botswana as an export platform

Botswana is an ideal platform for exports to the SADC region, which contains 200 million consumers and a GNP of $170 billion. Intra-SADC trade is being liberalized and the market is likely to expand upon implementation of the SADC Free Trade Agreement over the next 8-to-12 years. There are already no customs duties on shipments to the other SACU countries. Botswana does not tax exports, nor does it generally require permits (an Export Declaration Form must be filed for all goods exceeding approximately $370 in value).

Sell to the government

Government tenders are administered through the Botswana Central Tender Board (CTB), which is located within the Ministry of Finance and Development Planning. The CTB makes the final decision on all government tenders, usually based on cost and technical merit. Tenders are first evaluated by a consultant and/or a technical review board, appointed by the relevant ministry, which then makes a recommendation to the CTB. The CTB generally follows the recommendation, but can and has overruled it. A CTB decision may be appealed only if there were procedural irregularities in the tender process. Lobbying the CTB or its members is also prohibited. American companies are encouraged to contact the relevant government ministries or parastatals to provide input at the drafting stage of tenders for major projects. Contact the U.S. Embassy in Gaborone for further information or appropriate contact points.

Sources of assistance

Botswana has been very proactive in encouraging business investment and trade. Investment incentives include: the Financial Assistance Policy (FAP), which provides grants for employment generation projects; capital grants, which are grants for productive businesses with a minimum economic rate of return of six percent; and Development Approval Orders (DAO), which provide tax relief for investment as requested by the investor. In general, foreign investors are given equal access to all government incentive schemes in all economic sectors (save a few reserved for Batswana, such as gas stations and liquor stores). Contact the U.S. Embassy in Gaborone for further assistance and information on these incentives.

Contacts for more information on customs requirements and rules, finding agents / distributors, and the U.S. Embassy are in the appendix.

EXCHANGE RATE USED IN THIS REPORT: US$ = 5 PULA

CHAPTER 3: SOUTH AFRICA

SOUTH AFRICA 1999		
Population and GDP	Total Population (millions)	43.4
	GDP per Capita (US$)	$6,900
Main Telephone Lines	Total (millions)	6
	Per 100 Inhabitants	13.77
Cellular Mobile Subscribers	Total (millions)	7.5 [3]
	Per 100 Inhabitants	5.8
Personal Computers	Total (millions)	2.1 [1]
	Per 100 Inhabitants	4.7 [1]
Internet	Total Users / Accounts (thousands)	1900 [1] / 729 [2]
	Users Per 100 Inhabitants	4.56 [1]

Source: CIA *World Factbook 2000 (GDP data is PPP)*, International Telecommunications Union *ITU Internet Indicators 2000*, Economist *ebusinessforum.com*, Pyramid Research SA (econometrix.co.za)
[1] 1998 figure
[2] Sept. 2000 figure, Mike Jensen (UN-AISI)
[3] Year-end 2000 figure

THE OVERALL IT MARKET AND INDUSTRY

South Africa is the largest IT market in Africa and is still growing

South Africa is located at the southern tip of the continent bordering Namibia, Botswana, Zimbabwe and Mozambique, while completely surrounding Lesotho and most of Swaziland. The South African IT market is the largest on the continent, ranks 20th in the world in overall market size, and ranks 8th in the world in IT spending as a proportion of GDP. [13] It is continuing to expand rapidly. The South African IT market is forecast to exceed $10.7 billion in 2004, up from $5 billion in 1999. [14] About 30 to 35 percent of the market is for software, 45 to 50 percent for hardware, and the rest are in IT services. South Africa accounts for nearly 40 percent of all IT spending in the greater Africa and Middle East region. Including the telecommunications sector, the combined market was $9.7 billion in 1997.

Strong economic growth after the landmark 1994 elections was tempered by the after-effects of the Asian financial crisis in 1997 and 1998. However, the South African economy is beginning to pick up again and for the most part the government has committed itself to fiscal discipline and market deregulation and privatization. This has contributed to a stabilization of the economy with moderate 2-3 percent growth this year. That is partly why the World Economic Forum has recently given South Africa a "high" ranking in overall business competitiveness.[15] Forecasts for growth in 2001 are in the mid-3 percent range.[16]

IT usage and spending continues to outpace overall economic growth. In the last five years real growth rates in the IT market have topped 10 percent per annum. In the software and

[13] International Data Corporation, *Blackbook 2000*.
[14] *Ibid.*
[15] World Economic Forum *Africa Competitiveness Report 2000-2001*; South Africa ranked seventh, below Egypt and above Senegal.
[16] South Africa Daily Mail and Guardian *"SA Economy Makes Steady Recovery," 10/30/00*

services segment, annual growth has approached 20 percent.

There are socio-economic challenges to greater IT use

In the post-Apartheid South Africa, economic resurgence and empowerment has been tempered by socio-political realities. The lifting of international sanctions in 1995 has created new opportunities for trade and investment in a formerly closed marketplace, while domestic political liberalization has unshackled pent-up commercial forces. For instance, full access to the Internet was once only available to the academic community. However, with the end to international isolation and the new democratic government, South Africa has since jumped into the top twenty nations worldwide in the number of Internet hosts and has nearly two million users online.[17]

On the other hand, there still remain many challenges. Prolonged under-investment in the country's black communities has created an economy with a vast chasm between the haves and have-nots. Both first world and third-world economies co-exist in South Africa. In the former, IT use and adoption closely mirrors that of the United States and Western Europe, with a lag measured in months depending on the sector. In the latter, access to basic services such as electrical power and telecommunications are more pressing issues. For example, there are sixty phone lines per 100 whites, but only one line for every 100 blacks.[18] Government procurement of IT -- excluding spending by state-owned enterprises like the Post Office and Telkom -- has been suppressed by pressure to ramp up investment in social services like health, education, and housing. Internet usage is nearing a plateau as the consumers financially able to go online already have.

Bringing the previously disadvantaged majority into the Information Age will be a great challenge. In much of the country, skilled labor and disposable income are in short supply and could potentially be constraints on long-term IT market growth. However, there is a growing consensus in South Africa that IT is one of the best hopes for both economic prosperity and information empowerment. The government has numerous initiatives in place to expand IT and Internet use in rural areas and among disadvantaged groups. For example, the Department of Communications has embarked on their "info.com 2025" initiative, which attempts to leverage IT as a way to achieve broad-based growth and equitable development. Some components of this program include the establishment of Public Internet Terminals (PITs) that will assist rural and underprivileged areas to get online, and Internet 2000, which aims to connect schools throughout the country to the Internet.[19]

An important trend is black economic empowerment (BEE). This is a process in which business groups from previously disadvantaged communities are given opportunities to establish a business presence via mergers, acquisitions, and joint ventures. Government and parastatal organizations are empowering black-owned companies by favoring their prospects for obtaining tenders and contract work. As the public sector accounts for over a quarter of South Africa's total GDP and between 40 to 60 percent of all spending on IT,[20] this trend is significant. Black-controlled firms now account for more than 10 percent of the Johannesburg Stock Exchange's market capitalization, over double the figure for 1997.[21] More than 100 black-owned IT companies have emerged in 1997 and 1998, which excludes the 80 or more black-led investment consortia of which many are buying significant stakes in existing IT companies.

[17] ITU *Challenges to the Network 1999*

[18] Pyramid Research SA, 1999.

[19] For more on this and other initiatives, please refer to the SAITIS survey.

[20] Number obtained from interviews with public- and private-sector officials.

[21] SAITIS *Survey of the IT Industry and Related Jobs and Skills in South Africa, January 2000* (http://www.saitis.co.za).

According to BMI-T, the combined turnover of black-owned IT and telecommunications companies comprised about 15 percent of South Africa's total IT market in 1999.

The investment climate is improving --

The South African government has been actively and aggressively courting U.S. investment, with information technology, telecommunications, and electronics as priority investment areas. As a result, the United States has been the largest source of new investment in South Africa since 1994. South Africa has taken concrete legislative and regulatory steps to attract new investment. These include: reducing import tariffs; eliminating the discriminatory non-resident shareholders tax; removing certain limits on hard currency repatriation; lowering the corporate tax rate on earnings to 30 percent; and allowing foreign investors 100 percent ownership.

During the last several years, crime and corruption have emerged as major issues that could negatively affect foreign investment in South Africa. The government has been committed to a tough stand on corruption. Current law provides for prosecution of government officials who solicit or accept bribes, and there are no fewer than 10 agencies involved in anti-corruption activities. Violent crime is perhaps of more concern to foreign investors, however, and measures to increase safety have increased the costs of doing business in South Africa. A new FBI-type agency has been created and other measures have been taken, but the police are not yet particularly effective or trusted in majority communities because their historical role in enforcing white minority rule. It remains to be seen whether the government can succeed in reducing the rate of violent crime in South Africa.

Top International Investors in South Africa (Rand billions), 1999

Company	Country	Invested
1. Petronas	Malaysia	4.700
2. SBC Communications	USA	3.720
3. Dow Chemicals	USA	2.720
4. Telekom Malaysia	Malaysia	2.200
5. Coca-Cola	USA	2.070
6. Lafarge	France	1.530
7. Placer Dome	Canada	1.410
8. Lonrho Plc	UK	1.400
9. Swissair	Switzerland	1.400
10. AP Moller	Denmark	1.222
11. Caltex	USA	1.200
12. Billiton	UK	1.104
13. BMW	Germany	1.100
14. IBM	USA	1.022
15. Movenpick Hotels	Switzerland	0.923

Source: Investment South Africa, 1999

-- and intellectual property protection is being stepped up

The South African government appears to be more proactive with regards to the protection of intellectual property rights (IPR). Some recent developments indicate a positive trend:

- The Counterfeit Goods Act of 1998 (CGA) is gradually being implemented by the Department of Trade and Industry (DTI) through appointment of an inspector and designation of a warehouse for seized counterfeit wares.
- An amendment to the CGA was presented to Parliament which would clarify use of the Criminal Procedure Act in this regard and thus help implementation of the CGA.
- The Business Software Alliance (BSA) along with the South African Office of Trademarks and Patents hosted a series of anti-piracy in government workshops across the country.
- The American Chamber of Commerce in South Africa has started an industry working group called IPact to address intellectual property rights concerns. This group has met with DTI Minister Alec Erwin and is working to help the

government with implementation of IPR laws.

In May 2000, the U.S. Trade Representative (USTR) removed South Africa from its Special 301 Review Watch List. The Special 301 provisions of the U.S. Trade Act of 1974 require the U.S. Trade Representative (USTR) to identify countries that deny adequate and effective intellectual property rights or which deny market access to persons who rely on intellectual property protection. USTR also places countries on a priority watch list or a watch list. These listings are designed to signal to foreign government officials the seriousness with which the U.S. views intellectual property problems in their country. Countries on the Watch List have intellectual property practices or barriers to the market that are of particular concern, but that are narrower in scope and / or commercial impact than of those countries on the Priority Watch List.

TRADE AGREEMENTS[22]

South Africa is a founding member of the WTO but is not currently a signatory to the WTO Information Technology Agreement (ITA), which eliminates external tariffs on a range of IT products. However, South Africa is a signatory to the TRIPS (intellectual property) and TRIMS (investment measures) agreements at the WTO, and has obligations in value-added services (Uruguay Round) under the WTO Agreement on Basic Telecom Services. On a bilateral basis, the European Union and South Africa have ratified a free trade agreement, which commits the EU to eliminate tariffs on 95 percent of South Africa's imports over a 10-year period, while SA is to reciprocate on 86 percent of EU imports over a 12-year period.

South Africa has been a member of the Southern African Customs Union (SACU) since its inception in 1910. There are no internal tariff barriers among the SACU countries, which include Botswana, Lesotho, Namibia, and Swaziland in addition to South Africa. However, because of differing tax regimes, there are some tax adjustments that occur at the borders. All SACU members, except Botswana, share a common currency as members of the Common Monetary Area (CMA).

South Africa is also a member of the Southern African Development Community (SADC), an organization with 14 member countries in the Southern African region that seeks to foster economic growth and integration. A NAFTA-style free trade agreement is currently being negotiated among the SADC countries, with implementation possible in late 2000 or early 2001. Non-tariff barriers and absence of agreement on customs procedures and standards have slowed down the negotiations.

REGULATIONS

Royalties, software license fees, etc. require the approval of the SARB

The South African Reserve Bank (SARB) administers foreign exchange controls, with commercial banks acting as authorized dealers of foreign exchange on behalf of SARB. In general, there are no controls on the removal of investment income or capital gains by non-residents. Companies taking money out of South Africa must merely complete a form (available from authorized dealers) if the amount is in excess of Rand 50,000. However, royalties, software license fees, and certain other remittances to non-residents require the approval of the SARB.[23] The DTI must approve manufacturing royalties (not including sales or marketing royalties).

Encryption

South Africa currently has no laws limiting the import or export of encryption products for non-military purposes. Any encryption designed specifically for military purposes must be declared and licensed by the South African

[22] For more information on investment, trade agreements, conversion and transfer policies, IPR, taxation, and trade regulations, please refer to the South Africa Country Commercial Guide 2000. Visit http://www.usatrade.gov and select South Africa.

[23] For SARB contact information, please refer to the appendix.

Department of Defense. There are also no prohibitions against the domestic use of encryption. The government E-Commerce working group on privacy and security (see E-Commerce section below) states the following in its recommendations:
"In the light of the international developments ... the working group recommends that government should take a very light-handed approach to the use of cryptography, and generally allow its development to be dictated by market forces and user requirements, in accordance with the spirit of the OECD guidelines."

Localization

The only localization requirement is that information and warnings on labels must be available in English. Information in Afrikaans or any of the other official languages is not required.

Standards

South Africa is a member of the International Organization for Standardization (ISO), which is the body responsible for developing standards in all technical fields except for electrical and electronic engineering. All computer equipment (imported and local) must comply with the following ISO standards administered by the South African Bureau of Standards (SABS).[24]

- CISPR 22: Radio disturbance characteristics of information technology equipment.[25]
- IEC 60950: Safety of information technology equipment.[26]

Intellectual property

South Africa is a signatory to most international conventions relating to intellectual property, such as the Trademarks Law Treaty at the World Intellectual Property Organization (WIPO) and the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) at the World Trade Organization (WTO).

Patents may be registered under the Patents Act of 1978 and are granted for 20 years. Trademarks can be registered under the Trademarks Act of 1993, are granted for ten years and may be renewed for an additional ten years. The Copyrights Act of 1978 is based on the provisions of the Berne Convention and was modified in 1992 to include computer software.

In order to register a trademark or brand name, the first step is to do an informal search to ascertain whether the name is in use or not. If not, a letter requesting the registration of the name and Rand 77 in Revenue Stamps should be sent to: Registrar of Trademarks, Private Bag X400, Pretoria 0001. If the trademark or brand name has not been used before, the applicant will be sent application forms to be filled in and to be returned with a further Rand 242 in Revenue Stamps to the same address.

Taxation

The South African tax system is currently based on the source principle and tax is levied on income from a source within the country irrespective of whether it was earned by a resident or a non-resident. Although no case involving E-Commerce transactions has yet emerged, it can be assumed that a company with a server in South Africa, or that invests capital, or has South African buyers, may be subject to income tax. In other words, if you make any money in South Africa, you owe income tax. Commencing January 2001, South Africa will move to a residence-based income tax system. Tax will be levied on residents of South Africa irrespective of where in the world the income is earned. How this will affect E-Commerce transactions is unclear.

All companies that import goods or services into South Africa must account for the value added

[24] For SABS contact information, please refer to the appendix.

[25] CISPR 22 specifies the limits of radio frequency emissions which appliances and other electrical equipment are allowed. It indicates the maximum allowable emissions either radiated or conducted via the power cord at various frequencies.

[26] IEC 60950 applies to IT equipment including electrical business equipment and associated equipment, with a rated voltage not exceeding 600 V. It specifies requirements intended to ensure safety for the operator and layman who may come into contact with the equipment and, where specifically stated, for service personnel.

tax (VAT), except for imported services by registered VAT vendors. There is also a withholding tax on royalty payments to foreigners. No specific legislation pertaining to taxation of products or services delivered digitally has been enacted, but no products are exempt from tax.

Digital signatures may be legal

Theoretically, there is no legal bar to digital signature use for legal documentation, although there is no reference to digital signatures in existing South African law. There is no requirement for a signature to be a name or in ink -- identifiers like fingerprints or symbols are acceptable as long as they are made with the intention of signifying one's agreement with the document. Documents that must be registered and filed with the South African Deeds Registry, such as wills and other testamentary documents, cannot be authenticated using digital signatures.[27] It must be noted again that there is no law pertaining to digital signatures on the books in South Africa.

There is no legislation on data privacy...

There is no direct privacy or data protection legislation in South Africa similar to the EU Data Protection Directive. However, the Constitution protects privacy as a fundamental right while the Common Law provides remedies for breach of privacy in the form of injunctive relief and damages.

...or on E-Commerce product returns

There are no laws similar to the EU's Long Distance Selling Directive. However, the South African Common Law of purchase and sale would likely apply in this case. The purchaser of defective goods would be entitled to claim a reduced purchase price or even to cancel the transaction. However, any contractual provisions would take precedence over the common law. Although no clear case law exists in regard to application of this law to E-Commerce transactions, it is likely that these common law remedies apply equally to digital products.

SKILLS

There is a shortage of qualified software programmers, network administrators, and other IT workers in South Africa, which may have an impact on future growth of the sector. According to Information Industry South Africa (IISA), there are currently about 40 or 50 thousand workers in the IT sector but at least 200 thousand are needed to fully meet demand. This skilled labor shortfall is a function of various factors, including income disparities, the educational system, and worker emigration. On the other side of the spectrum, the pool of unskilled and semi-skilled workers is large and growing. With 54 percent of South Africa's population under the age of 24 and growing at an annual rate of 2.4 percent, it is estimated that there are almost four times the number of unskilled workers as job opportunities, but twice as many skilled job opportunities as qualified workers.

Decades of Apartheid have created an incredibly lopsided labor market. According to the latest data available from Statistics South Africa (SSA),[28] the official unemployment rate is 25.2 percent. This uses the International Labor Organization methodology of excluding people who have not looked for work in the four weeks prior to the interview. If these people are included, the unemployment rate jumps to 37.5 percent. As can be expected, the unemployment rate is highest in the black community at 29 percent. This is followed by the "colored" at 16 percent, Asian Indians at 10 percent, and whites at four percent.[29] Given near full employment among the white minority, and systemic joblessness among the black majority, it is evident that South Africa must address labor market inequities if the country is to have the skilled workers it needs to be competitive in the global economy.

[27] Network Times, Feb. 2000

[28] October 1998

[29] U.S. Department of State *Investment Climate Statement 2000*

The government has made this issue one of its top priorities, and is attempting to create a system that balances both the free market flexibility that is required in an increasingly open economy with employment security and decent wages. Several initiatives have been taken, including the Skills Development Act, Employment Equity Act, and the National Qualifications Framework. Some businesses claim that the labor market is now over regulated and have urged the government to scale back some of the recently enacted legislation. In response, President Mbeki has pledged to examine the impact of these new laws on the South African economy.

The Skills Development Act is a four-phase plan that commenced in October 1997 and will be fully operational by the end of 2000. The Act seeks to generate competitive levels of training within South African industry by raising workforce skills. Among the goals of the Act are to improve the productivity of the workforce and promote education and training for blacks. A national levy grant system has been established that will require private sector employers to put an initial 0.5 percent of total monthly payroll in 2000, and 1 percent in 2001, into a skills development fund.

Companies will be able to claim a refund on the levy in the form of government grants if they can prove that they have actually upgraded the skills of their employees based on certain stringent criteria. Only companies that have a skills development plan in place and have committed to send their employees to accredited training establishments will qualify for grants. These training establishments must also be accredited if they are to receive the grant monies as payment.

In addition to the Skills Development Act, the government has put forward the National Qualifications Framework and the Employment Equity Act. The former will create internationally comparable standards for training and education, while the latter will require all companies with 50 or more employees to devise a plan to ensure equitable racial representation in their workforces. Affirmative action policies, similar to those in the United States, are being applied in order to increase the number of blacks in the workforce. This and other government policies have both supporters and critics, but the government hopes to help reduce overall unemployment levels by 2020. It aims to create 833,000 additional jobs in the economy in a five-year period.

HIV / AIDS.

South Africa's estimated rate of HIV / AIDS infection is staggering and will have an enormous impact on future human capital. It is estimated that around a quarter of the population is infected with the virus, with up to a third infected in the Kwazulu-Natal province (Durban).[30] Although some businesses in South Africa have begun to factor the socio-economic consequences of the disease into their long-term thinking, there has been scant research into the economic effects of mass HIV infection. Life expectancy is expected to decrease in South Africa from 68 to 35 years by 2010, with between 800,000 and 1 million deaths per year. The future economic consequences of this phenomenon are unknown but are likely to be profound.

TELECOMMUNICATIONS

There are about 6 million installed lines in the country (a teledensity of 13.8) and about 7 million cellular subscribers. Annual telecom service revenues total $3.5 billion with annual investment in the sector approaching $3 billion. The South African telecommunications services market was worth more than R26 billion. It is expected to grow to about R57 billion by 2003, a CAGR of 19 percent. Of the R26 billion, the Telkom Group generated R22.67 billion, an increase of 18 percent over the previous year. The sector supports approximately 100,000 jobs.

[30] SAITIS *Survey of the IT Industry and Related Jobs and Skills in South Africa, January 2000* (http://www.saitis.co.za).

South Africa is the largest telecommunications services and equipment market in sub-Saharan Africa and is a key market entry point for the entire sub-Saharan African region. In 1999, U.S. telecom equipment exports to South Africa totaled $155 million, while the bilateral trade in telecom services was valued at $103.6 million.

South Africa has fewer than 14 telephones for every 100 inhabitants (compared to 66 for every 100 in the United States). Yet this number is the second highest in all of sub-Saharan Africa (exceeded only by the small state of Mauritius). While telephone penetration is much greater in the larger, commercial centers of South Africa, it is much lower (e.g., two phones per 100) in many of the disadvantaged non-white townships and rural areas. South Africa's official telecommunications plan, referred to as "Vision 2000," calls for a 75 percent expansion of telephone access prior to 2003. That involves an addition of four million new lines; two million intended to improve access in under-served areas, one million for developed regions, and one million to replace aging infrastructure. It is estimated that less than two percent of black South Africans have access to wireline or wireless phones.

Telecommunications Act of 1996

South Africa's Telecommunications Act of 1996 provided a framework for the liberalization of the telecommunications sector in the country. The Act includes several key provisions, including the creation of an independent regulatory body - the South Africa Telecommunications Regulatory Authority (SATRA), the establishment of universal service and human resource development funds, along with corresponding oversight agencies; and granting Telkom South Africa (Telkom S.A.), monopoly rights for the provision of basic telecommunications services in South Africa, for a period of five (and possibly six) years.

The Department of Communications operates under the Ministry of Communications and has responsibilities for developing and implementing policy and requisite legislation for the telecom sector and managing the government's shareholder responsibilities of several state-owned enterprises, including Telkom SA and the South African Post Office.

The South African Telecommunications Regulatory Authority (SATRA) was created by the South African Ministry of Posts, Telecommunications and Broadcasting in 1996 to establish an independent telecom regulatory authority. As defined in the Telecommunications Act of 1996, SATRA was charged to introduce and maintain fair competition in the industry, manage the radio frequency spectrum, protect consumer interests, prescribe performance and operating standards for telecom facilities and equipment, and encourage ownership and control of telecom services by persons from historically disadvantaged groups. SATRA worked to prepare the regulatory framework necessary for the telecom industry to compete successfully within South Africa and globally and formulated regulations for the Minister to consider for approval.

Legislation was passed and signed into law by President Mbeki in May 2000 whereby SATRA and the Independent Broadcasting Authority (IBA) merged to form the Independent Communications Authority of South Africa (ICASA). This new body, which now oversees the telecommunications sector, began operations in July 2000. It is notable that only one ICASA councillor-nominee out of seven was from SATRA.

The Telecommunications Act also established a Universal Service Agency (USA) whose goal is to promote access to telecommunications for every citizen of the country. Presently, 35 percent of all South African households have telephone service, but only 11 percent of black households do. In the Northern Province of the country, the figure is 8 percent. The USA advises the Minister on matters relating to universal access and monitors provision of

universal service and access. It administers a Universal Service Fund and has been active in establishing tele-centers around the country.

The South African Government has issued a second draft of the White Paper on Telecommunications Policy, which is a working document. It draws on the policy framework adopted at a national colloquium in late 1995 and reflects responses to a previous Green Paper on Telecommunications. The policy framework covers issues such as universal service, market structure and competition, ownership and finance, regulation, and the telecom equipment industry. Other issues are examined with reference to the policy framework, including the economic empowerment of historically disadvantaged South Africans, tariffs, human resources, regional and international co-operation, and legislative reforms.

The cellular market is booming.

In six years since the introduction of cellular telephone services, South Africa has become the fourth fastest growing cellular market in the world. South Africa's cellular market has been dominated by Mobile Telephone Networks (MTN) and Vodacom (a joint venture between Telkom and a U.K.-based company.) In 1999, the Communications Minister announced that a third cellular license would be awarded. The government decided not to auction the licenses, instead requiring a R100 million license fee in order to emphasize quality of service and delivery to rural and disadvantaged areas. The bidding and evaluation process did not go smoothly. Some believed that there was a lack of clarity regarding universal service and black empowerment goals as well as on critical issues such as roaming, number portability, and interconnection fees. Nine consortia submitted bids in June 1999; three later were withdrawn; and public hearings on the bids were held in the fall. In October, SATRA announced the weighting that had been allocated to the criteria for evaluating the bids. The criteria and assigned weights were:

- Business plan and implementation strategy: 44 percent
- Empowerment: 25 percent
- Technical plan: 13 percent
- Universal service: 11 percent
- Impact on industry and consumers: 7 percent

Various allegations against one of the consortia and against SATRA members and ministry officials for attempting to influence the bid sparked controversy and delayed the announcement of the winner. In mid-November, a Parliamentary Oversight Committee criticized SATRA's chairman for public conflicts with several SATRA councilors and called for an investigation. Some associations of telecom service providers accused SATRA of illegal actions and incompetence. The bidders accused SATRA councilors of irregularities in the bid evaluation process. The Attorney General began investigating these allegations, as well as the charge that SATRA councilors may have had ties to the cellular license bidders.

Unfortunately, the bidding process has remained mired in controversy and disputes over evaluations of bids during 2000. In late February 2000, SATRA announced it had selected the Cell C consortium as the intended preferred bidder, but that did not settle the issue. During SATRA's evaluation process, which lasted from June 1999, when the bids were due, to February 2000, the consultant BDO Spencer Stewart was employed to evaluate the business plans of the bidders. When SATRA announced Cell C the winner, a number of documents were leaked relating to the bid evaluation. One of these documents was a portion of the BDO report, which said that Cell C would be technically insolvent for its first five years of operation.

The leaked documents resulted in a court challenge by NextCom, one of the other bidders, and forced SATRA to contract another consultant, Grant Thornton Kessel Feinstein (GTKF) to review the business plans and

provide a second opinion. During the week of June 19, GTKF published its findings: Cell C had undercalculated its expenses for the first five years, resulting in an even larger loss for a longer period of time than shown in the BDO report. SATRA reconfirmed its award to Cell C in June.

One of the bidders, NextCom, is pursuing a judicial review of SATRA's license evaluation and awarding process. Since the Minister has been accused of interfering with SATRA's decisions, it is not likely that the Minister will unilaterally award the license without a clearance from the High court. It is expected that judicial review cannot be completed until February 2001. If the Court does not uphold SATRA's selection, ICASA may have to retender the third cellular license. The delay in awarding the license directly affects dozens of companies and clearly benefits the two incumbents, which continue to sign up new customers. The government has appointed a ministerial subcommittee in an effort to get this process back on track. However, the minister of communications was not put on that subcommittee. The cumulative impact of all this on telecom investors is yet to be determined.

The proposal for a third cellular system

Whether or not Cell C ultimately prevails, it is instructive to examine more closely the system they have designed and the objectives they hope to accomplish. *(See Appendix: "Details of Cell C's license application")* Whichever bidder ends up with the new license will undoubtedly propose a largely similar approach. The Cell C consortium is 60 percent held by the Saudi Oger group and 40 percent by Cellsaf, a group of 33 local empowerment groups. Ten of the 33 are business groups, 11 regional investment and technology companies and 12 social empowerment groups; together they represent millions of disadvantaged South Africans. The technology partner is the U.S.-based GTE telecommunications group. GTE is to assist in business planning, product development, financial control, network management and operations, and recruitment strategy and training.

The development of South Africa's cellular marketplace has become a great success story, and the market should continue to prosper with the advent of a third operator. The two existing networks are high quality and are outperforming some European cellular networks. MTS and Vodacom have call success rates of about 95 percent, while the rate of dropped calls is only 2 to 3 percent. Average revenue per user each month is running between $40 and $50. Cellular penetration among higher income brackets is about 60 percent, and only 12 percent among lower income brackets. The rate of churn among existing networks is about 20 percent for prepaid and 10 percent for contract customers. A common assumption was that if South Africa's third operator could have become operational in 2000, it could have captured a 15 to 20 percent market share within five years, with most of the growth coming from new subscribers.

The advantages of cellular services

Studies show that business contract users will make greater use of mobile-to-mobile communications over the next few years and interact less with the Telkom network. Once cellular networks operate at speeds of 56 kbps and above, they will offer more advanced data communications services that currently are tied to land-line networks. In the area of voice telephony, South Africa' s cellular carriers already are competing with Telkom in the access component of the network. The services markets for cellular carriers throughout the SADC region (and the rest of sub-Saharan Africa) are expanding as wireless solutions to communications needs are developed and implemented at cost-effective rates. Cellular carriers are using several themes in marketing their services to stress differences from services offered by the traditional wireline carriers. These themes include

- Faster (one-day) service delivery. Once customers purchase a cellular phone and

a prepaid card, they have immediate access to the network. Obtaining service from a wireline carrier (e.g., Telkom in South Africa) involves a waiting period of four weeks or more if the local exchange has the capacity to accommodate a new line. If not, the wait can extend for months.

- Entry and usage costs. Mobile connections are often half of what the wireline carrier charges to install a phone line, although the additional price of a handset gives a cost advantage to the wireline carrier. For users who do make large volumes of calls, monthly prepaid cards for mobile service, that typically allow the caller 50 minutes of outgoing calls and unlimited incoming calls per month, is usually less than the average monthly charges for fixed line telephony.

It is true that the higher income population is likely to have a fixed line phone and get one or more mobile phones as well. But among the less well-off, a significant percentage (30 percent in one study) of prepaid users of cellular services does not have a fixed line telephone, and most of them do not intend to order one. Thus, substitution of mobile service for connection to the network via copper wire is occurring in SADC countries, and the monopoly wireline carriers already are facing competition in the provisioning of basic access in the residential market. As cellular networks become equipped to offer Internet access and other value added and data transmission services, their competitive position via-a-vis the wireline carrier will only become stronger.

South Africa recently issued a license for personal communication by satellite. This was an outgrowth of the policy on global personal communication by satellite that was issued in late 1998. However, general market access for the provision of satellite communications services is still restricted until the end of Telkom's monopoly period. International services must be provided through Telkom' s network. Foreign investment in suppliers is permitted up to a cumulative maximum of 30 percent.

Telkom South Africa

In May 1997, SBC International finalized an agreement to become the strategic equity partner in Telkom South Africa which to that point had been a 100 percent state-own telecom company. The $1.26 billion deal was the first major privatization in South Africa and is the largest direct investment in the country to date. Thintana Communications (the consortium of SBC International and Telekom Malaysia that won a combined 30 percent stake in Telkom S.A.) are ahead of plans to install 2.7 million new lines by the end of 2002. South African officials reportedly are considering a 2001 IPO for Telkom, and plans are under way to sell a small stake in Telkom to its partners and employees, who would have the opportunity to acquire up to 2 percent of Telkom. Three percent of the carrier may go to as many as four black empowerment partners.

Telkom South Africa is the only licensed provider of public switched telecommunications services in South Africa. It was commercialized in 1991 and remained a wholly state-owned enterprise until 1997. Telkom has been granted a five-year period of exclusivity to operate public switched telecom services, with the prospect of a sixth year if it exceeds the line roll-out and service quality targets set in its license. The targets include the installation of 2.8 million new telephone lines, including 120,000 payphones and the replacement of more than one million non-digital lines by March 2002. Failure to meet its license obligations will result in financial penalties imposed on Telkom. In the first two years of its contract, Telkom added 900,000 new lines to its network and replaced 740,000 non-digital lines. It is confident that it will meet the expansion, modernization and service quality targets specified in its license over its five-year period of exclusivity.

Telkom provides other telecommunications services through several subsidiaries. Telkom has a 50 percent equity stake in the Vodacom Group that provides cellular services; Vodacom Internet Company is an ISP that offers prepaid access to the Internet at local Telkom rates. In 1996, Telkom formed South Africa Internet Exchange (SAIX) to build an Internet backbone and provide services to ISPs. SAIX runs the country's largest IP network which has nearly 100 points of presence around the country and 40 Mb of international bandwidth from South Africa into the U.K. and the USA. Subsidiaries offering services to industry include Q-Trunk (two-way communications) and Swiftnet (wireless data access services.)

Telkominternet is a new Internet access service that claims users can be connected within 24 hours from the time of request. Hot lines are available to provide technical support and answer questions. Charges are about $13 a month, plus normal telephone usage charges applied for actual time on line. Since Telkom has an extensive network already operating in places where consumer demand is strong, in most cases local usage rates will apply. Telkominternet provides unlimited Internet browsing and full e-mail capabilities. Telkom offers several electronic commerce applications. CyberTrade supports electronic banking transactions from the home or office. There is an electronic mailbox system adapted for electronic data interchange (EDI) and a public-email service that facilitates transfer of messages and information between separate electronic messaging systems and consumers.

Value Added Network Service Providers (VANS), services and the dispute with Telkom

Although VANS have been offering services in South Africa since 1992, and although the South African Government made commitments under the World Trade Organization (WTO) that fully liberalized the provision of value-added services as of January 1994, recent controversy has led to disputes between the VANS and Telkom and Internet service providers (ISPs) and Telkom, and, potentially, between the Governments of South Africa and the United States.

By the end of 1996, a fairly mature ISP/VANS market was in place. Several major international service providers, such as UUNET, IBM Global Services, Internet Solutions and others had their own backbones and networks of ISPs. VANS were also widely distributed, used primarily by the banking industry for EDI. More than 100 ISPs are providing services in South Africa. SATRA previously ruled that ISPs fall under the definition of a valued added network, and as such, required only licensing by SATRA. Telkom has appealed this ruling in court.

As the VANS saw business opportunities in the rapid growth of the Internet, some started offering Internet connections to the general public. Some of the large ISPs became very successful by offering fast, reliable connections at reasonable cost. Even though both VANS and ISPs had to buy basic services from Telkom in order to provide connectivity to their customers, Telkom became concerned that it was losing some of its the high-margin, retail business and took actions that made it more difficult for VANS and ISPs to roll out their services.

The Internet Service Provider Association (ISPA) was formed in 1996, partly in reaction to Telkom's aggressive moves to get ISPs to join SAIX. Telkom filed suit against SATRA and ISPA in late 1997 claiming that some ISPs were simply reselling bandwidth in violation of Telkom's licensing conditions. SATRA issued its regulations on VANS and services they could provide in the spring of 1998, but Telkom claimed the ruling was procedurally deficient and had no validity. Until mid-1999, about a dozen VANS (including U.S. firms) were supplying their services to corporate customers and enjoyed reasonable and non-discriminatory access to Telkom's network. At that time, Telkom unilaterally began to deny access to its

private circuits necessary for the supply of value added services. Telkom alleged that some of the VANS were operating illegally and threatened to shut them down. If VANS operators did not confirm in writing that there were not reselling bandwidth, Telkom refused to provide additional facilities. Telkom has claimed it is losing 1 billion Rand (about $170 million) per year through illegal bandwidth resale by VANS and ISPs.

In January 2000, AT&T, that operates as a licensed VANS in South Africa, filed a formal complaint with the U.S. Trade Representative alleging that Telkom's refusal to provision circuits to it and other VANS violated the Republic of South Africa's commitments for value-added network services under the WTO's General Agreement on Trade in Services (GATS). On April 4, the USTR announced the results of its annual review of foreign countries' compliance with telecommunications trade agreements, and established deadlines for further review of seven countries, including South Africa. The statement noted that

> *South Africa's WTO commitments require the South African government to ensure that Telkom provide non-discriminatory access to and use of its facilities for the supply of competitive value added network services.*

On June 16, USTR took note that Telkom had agreed to provide the lines AT&T had ordered, but expressed concern that Telkom might seek to impose WTO-inconsistent restrictions on its value-added service competitors. USTR's reference was to Telkom's agreeing that value-added service suppliers could lease Telkom's circuits to offer value-added services on a "shared basis," allowing them to transmit data to and from multiple customers on a single line. USTR said it would continue to monitor the situation in South Africa and urged that administrative proceedings underway in the country result in defining value-added services as expansively as possible to encompass all services covered by South Africa's WTO commitments.

As of November 2000, no other VANS besides AT&T have been given the services they ordered from Telkom, leading the VANS organization SAVA to complain that Telkom was discriminating against South African companies.

As one of its last official acts before being dissolved, SATRA attempted to resolve the 3-year old dispute between Telkom and the VANS on June 28 by giving Telkom 45 days to clear backlogged orders for additional and new service to VANS. Telkom, however, claimed that the ruling was flawed. The ruling did not resolve questions concerning the legality of VANS nor did it define "value-added." Those questions are being addressed in ICASA's new proposed VANS and ISP regulations which were announced on October 11. The public comment period on these regulations extends until January 9, 2001, and a final public hearing is scheduled for February 23, 2001.

On a related front, SATRA had proposed "facilities leasing guidelines" to further interpret sections of the Telecommunications Act on interconnection by defining terms, establishing cost guidelines, and setting time limits on responses to connect. Under the Telecom Act, the Communications Ministry had control over facilities leasing until May 7, 2000, by which time SATRA was to come up with new guidelines. The guidelines govern interconnection between communications systems, such as a land-line operator and cellular provider and companies leasing facilities from Telkom, such as a VANS or ISP. These guidelines had received the approval of the Minster of Communications and been published in the official government gazette on March 15. A month later, the Ministry withdrew the guidelines without comment. Some competitive service providers note that this action has perpetuated regulatory uncertainty in the area of interconnection, as well seemingly undercut SATRA's authority over Telkom, which has opposed SATRA's favored long-run incremental cost model. The facility leasing

guidelines will be part of the new VANS regulations.

ICASA is also conducting a separate enquiry on virtual private networks (VPNs), with comments due November 9, 2000, and a public hearing scheduled for November 23. Whether a VPN is allowed under South African law is at the heart of the dispute between Telkom and the VANS. A VPN allows multiple customers to share telecommunications infrastructure. State-of-the-art hardware and software keep customers' data separate and secure, and increase the efficiency of the telecom infrastructure. The Telecommunications Act of 1996 lists a Managed Data Network Service (MDNS) as one of the allowable services that a VANS supplier can provide under its VANS license (without actually defining what an MDNS is). If ICASA rules that a VPN is equivalent to an MDNS, ICASA may be in a much stronger legal position in its VANS rulings.

Satellite communications

The Telecommunications Act of 1996 gives Telkom exclusivity over all public satellite telecommunications until March 31, 2002. Private satellite telecommunications systems may only operate under contract with Telkom, and may not resell satellite bandwidth to the public. Global mobile personal communications services (GMPCS) licenses for direct satellite-handset communications are not yet available. The regulations are undergoing legal review but the GMPCS regulations will probably stay on hold for a while due to all the other pending matters before ICASA. Globalstar is operating under a technical testing license which does not allow commercial exploitation and its South African earth station, from which it planned to serve neighboring countries, cannot be operated without a license, preventing it from providing service in Namibia, Botswana, Zimbabwe, and Mozambique. Telkom has built a ground satellite station to connect into the public switched network for each company. Telkom owns shares in both companies.

No license exists for direct satellite-to-consumer broadcasting. Both WorldSpace and DSTV (Direct Satellite TV) have been operating without licenses, although an interim license was available for a small window of time in 1999. There currently is no timeframe for licensing direct satellite broadcasting.

There are challenges ahead in telecom

South African telecom officials, operators and consumers are faced with a number of significant issues. How they are addressed will have a great effect on the future development of the sector. Some are broad policy matters; other involve specific details.

- The end of Telkom's monopoly. It is generally anticipated that Telkom's monopoly will end in 2002. There has also been an expectation that the government would license a second land-line operator to compete with Telkom. The most likely candidate is said to be a combination of government owned parastatals that already are running their own communications networks: Transnet (railways), Eskom (power), and Denel (defense). Observers doubt that fiber bandwidth will be aggressively deployed if two state-owned companies dominate the market. If new entrants to the market are allowed to build their own networks, rather than simply interconnecting with the existing network, it will have a large impact on the growth of the telecom equipment market as well.

- There are serious questions as to whether establishing a duopoly of government controlled firms is the best long-term approach to promote rapid development of a country's telecom facilities, expand competition, and encourage investment in the sector. A situation of duopoly may only perpetuate some of the least desirable features of a monopoly, and the two firms may reach a "gentlemen's

agreement" not to effectively compete against each other in terms of prices and services and simply divide the market up in ways that guarantee their favored positions. Clearly, different models for promoting competition and development of the country's telecom market need to be considered. Continuing to reserve provision of certain services to land-line operators may not be justified as new technologies enhance the capabilities of wireless firms to deliver an increasing variety of communication services at competitive costs.

- The role of ICASA. It cannot be overemphasized how important the role of an independent telecom regulator is to the future development of South Africa's telecommunications market. Foreign investment shies from countries with weak, ineffective regulators, where dominant carriers are free to act in accordance with their own economic interests and stifle new market entrants. Like other newly-established regulators in the SADC region, ICASA is still defining its institutional role. It is seeking, and receiving, additional resources to help it develop skilled resources to meet the regulatory challenges it faces. Critics said that SATRA has been unable to address important issues in a timely, effective manner. It is still to be determined whether the new ICASA will meet those challenges. Nor will it be surprising if there are ongoing challenges to ICASA's authority and to its efforts to carry out its regulatory functions.

- Managing the "creative tension" between promoting universal access and advanced telecom networks and services. South Africa, along with most other countries, seeks both to increase the degree of universal service/access to the network and promote utilization of new technologies and services in support of commercial activities that enhance national economic growth and global competitiveness. Some countries struggle to define what they regard as the best "balance" at any one time between the forces of liberalization/deregulation vs. exclusivity/control in the telecom sector (how and when to increase competition) that advances both worthy goals. Business users complain about lack of or improperly distributed bandwidth in the commercial centers of the country and the high costs of leased circuits. They believe that unless the Internet infrastructure is upgraded and facilities competition is encouraged, South Africa will fall behind in global competitiveness and trade. Social and political leaders stress the need to deploy telecom infrastructure to all parts of the country and worry that new competitors will only serve the areas of highest usage and profits. Neither objective can be ignored, but the challenge is to advance both in ways that do not undercut either.

Need for network applications

Increasing public access to the telecom network is turning out to be just a first step. The real challenge in South African telecom may be to design and introduce attractive, affordable IT services once the access lines are installed. It is reported that more than one-half of all new lines Telkom has installed over the past year or two are not currently in use. Either the subscribers found they could not afford the charges for them, or they decided they really could make little use of a telephone line. Besides ordinary voice, what other services can access lines provide to make them commercially self-sustaining? Companies that can provide innovative solutions (services and equipment) to community telecom centers and individual subscribers at affordable prices will make a significant contribution to the telecom development of the SADC region.

INTERNET AND E-COMMERCE

Estimates on the total number of South Africans online range from 700,000 to 1.9 million. The International Telecommunications Union pegs the 1999 number at 1.27 million and Acuity Media Africa estimates it at 1.82 million. This is roughly three-quarters of the entire continent's online population.[31] Many subscriber accounts have multiple users so accurate figures are difficult to obtain. Mike Jensen of the UN's African Information Society Initiative estimates the actual number of dialup accounts at 650,000.

There are approximately 112 Internet Service Providers (ISPs) in South Africa, with U.S. multinationals like UUNet and CompuServe among the major operators. South Africa is the de facto regional Internet hub, with international leased lines to neighboring countries and fiber and satellite links to Europe and the United States.

Demand for Internet connectivity has been strong in the last several years. The number of dial-up subscriber accounts grew by more than 100 percent in 1998 with 16,000 new subscribers a month, and total Internet usage is expected to grow by 37 percent in 2000. The total number of individual users is expected to reach 3.56 million by 2003. BMI-T estimates that 7.4 percent of South African households are online today, with 10.5 percent projected to be using the Internet in 2003.

According to Acuity Media Africa, the total number of South Africans that access the Internet via dial-up modems and ISPs at the end of 1999 was 560,000. This is up from 366,000 at the end of 1998. About 17 major ISPs serve the largest share of these users. The number of South Africans accessing the Internet at work via leased lines rose 40 percent in 1999 to 980,000. This market is dominated by Internet Solution (IS), owned by South African IT leader Dimension Data, and UUNet SA, which is a joint venture with South Africa's Datatec and the U.S. company. There are about 280,000 Internet users in universities and schools.

The South African user profile is similar to others around the world…

The South African Internet usage profile and demographics mirror that of other countries. About 60 percent of South African Web users are male, and the 18-24 year old age group is showing the greatest growth.[32] Approximately half of Web user households have children at home. Most people in South Africa still use the Web primarily to search for information, with work users increasing their usage dramatically -- from an average of 16 days to 21 days per month between March and November 2000 -- and home users remaining steady at 15 days per month. On average, South African Web users visit 19 web sites per month and about a third have three or more e-mail addresses.

…but socio-economic disparities have still kept Internet use low

Despite the strong growth in Internet usage, various factors have still kept Web use relatively low in South Africa compared to the developed world. The large income disparity, mostly along racial lines, has put Internet access out of reach for most of the population. For example, while the percentage of white men with Web access at home increased from 9 to 12.2 percent between April 1999 and April 2000, the percentage of black men with access remained unchanged at 0.2 percent.[33] Internet use is strong among the upper income bands, but metered local telephone calls make dial-up access costly for the less affluent and discourage heavy online usage. Access in areas outside of major cities is also difficult, with wireless or satellite service an expensive alternative to local dial-up. For example, 82 percent of home Web users also have a cellular phone and 41 percent have digital satellite TV.[34]

[31] Trailing South Africa are Egypt, Morocco, and Kenya.

[32] Webcheck Project SA Web User 1999 study (http://www.webchek.co.za).

[33] *Ibid.*

[34] *Ibid.*

South Africa's dual economy, with developed and developing country characteristics, will continue to be reflected in its IT and Internet usage patterns. Internet use is strong in many parts of the corporate sector, with 97 percent of large, 89 percent of medium, and 80 percent of small companies having some online access. The same is true for upper income households. However, the opposite scenario holds among lower income groups and this is unlikely to change in the near to medium term. Low-cost alternative Internet access devices, such as thin-client terminals, game machines, and wireless handsets, may eventually make the Internet more affordable for the majority of the population. About 1.2 million alternative access devices are predicted to be in use by 2003.[35]

E-Commerce is small but growing

The South African E-Commerce market is poised for major growth in the next several years, with expectations that it will grow from $3.5 billion in 1999 to $24 billion by 2004. Transaction values (excluding financial services) via the Internet are forecast to climb from $1 billion in 2000 to $40 billion in 2005.[36] Currently, most South African companies view the Internet as a marketing and customer communication tool rather than a purchasing or selling mechanism. However, a recent survey by BMI-T indicated that E-Commerce is the number one priority among the top 200 South African companies. Although 94 percent of the web sites for large companies are not currently E-Commerce enabled, the majority intends to establish online payment authorization systems in the next couple of years. By the end of 2000 there will be approximately 320,000 Internet-connected companies in South Africa, and more than half of these companies will have Web sites.

EDI grows --

Although many SMEs are moving from traditional electronic data interchange (EDI) and value-added network services (VAN) platforms to the Internet, observers expect EDI activity to grow faster in South Africa than the worldwide market. Most of this growth is and will be generated by Internet-extended EDI. However, the growth rate of EDI is capped by the simultaneous high growth in pure Web-based E-Commerce. Overall EDI transaction values will grow from $21 billion in 2000 to $30 billion by 2005, about a 20 percent compound annual growth rate. This compares to a 6 percent annual growth rate in the worldwide market.

-- but the Web will win

Total Web-style commerce (including transactions where final payment is not done on the Web) may reach $24 billion by 2004, representing 6.5 percent of the total value of all commerce. Two-thirds of this falls into the same vertical industry segments that were initially well suited for traditional EDI. The remaining third is in new categories of business-to-business and business-to-consumer E-Commerce. Web commerce where transactions were initiated and completed via the Web, but not necessarily paid for immediately will grow from $142.7 million in 1999 to $14.7 billion by 2004. Web-commerce where transactions are initiated, legally completed, and immediately paid for via the Web will grow from $54.7 million in 1999 to $2.9 billion by 2004.

Business-to-business (B2B) E-Commerce is anticipated to be nearly 80 percent of total Internet commerce[37] in South Africa as early as 2002, with revenues reaching $16.7 billion by 2004.[38] The trend lines are sharply positive. According to Acuity Media Africa, B2B transactions rose dramatically from $2.5 million in 1997 to $650 million in 1999. Process

[35] BMI-TechKnowledge (http://www.bmi-t.co.za).

[36] *Ibid.*

[37] *Ibid.*

[38] Andersen Consulting SA.

streamlining, such as online procurement, is likely to be a major growth area in the B2B space.

According to BMI-T, B2C Web-based E-Commerce will grow more than ten-fold by 2004. Consumers spent $450 million on the Web in 1999, up from $83 million in 1997.[39] This is expected to reach $5.5 billion in 2004.[40] Travel and accommodation ticketing will be by far the largest type of B2C business, with more than $2 billion worth of consumer transactions being influenced by the Web and nearly $700 million directly completed on the Web. There will also be activity in the consumer retail, drugs, and construction material areas. South African consumers are becoming increasingly willing to purchase items over the Web, as evidenced by the 607 percent year-on-year increase in Christmas holiday online sales in 1999.[41]

Business-to-consumer E-Commerce is still in its early stages. According to a Webchek survey, 74 percent of Web users have never bought online and of those that have, only 34 percent have made an online purchase more than five times. These frequent buyers tend to be white, English-speaking males and live in the Johannesburg / Pretoria area. About half of online buyers have purchased a book and 40 percent currently bank online. The top five product categories for Web purchases are: books, CDs, computer software, movie / theater tickets, and computer hardware.

Percentage of All Web Users Who Have Bought the Following at Least Once.

Item	Percentage
Books	13%
Car (new)	0.3%
CDs	8%
Clothing	0.7%
Computer hardware	8%
Computer software	10%
Cosmetics	0.7%
Educational items for kids	4%
Fast food	2%
Flowers	3%
Games	5%
Gifts	3%
Groceries	almost 0%
Jewellery	almost 0%
Life insurance	0.9%
Perfume	0.3%
Stocks and/or shares	5%
Sports equipment	3%
Stationery	0.9%
Technology gadgets	7%
Vitamins	0.6%

Source: Webchek Project SA Web User 1999B Study

B2C E-Commerce growth is being held back

There are four main factors inhibiting the growth of B2C E-Commerce in South Africa: low credit card penetration and use; a non-existent heritage of catalog or TV shopping; unreliable and expensive parcel delivery; and poor back-end order fulfillment on the part of online merchants. Products ordered from an Amazon.com warehouse in Seattle have been known to reach the South African purchaser sooner than a product ordered from a local online merchant.

The parcel delivery problem is being addressed by a new wave of local and regional courier services, which are becoming inexpensive and reliable alternatives to traditional parcel delivery companies. Another traditional scapegoat of local merchants, the South African Post Office, has improved their services. Order fulfillment is gradually improving as South African online merchants begin to upgrade their back-end systems and processes to remain competitive with international "e-tailers" like Amazon.com.

[39] Acuity Media Africa.

[40] Andersen Consulting SA.

[41] Ecnet – Electronic Commerce Network (http://www.ecnet.co.za).

Most South Africans do not have credit or debit cards, but rather have PIN-based bankcards that are currently not useable for online transactions. New payment technologies are a major growth area in South Africa. The banking industry is attempting to devise online payment mechanisms that are both secure and compatible with existing widely used infrastructure (i.e. checking accounts). One possible solution is to leverage the 30 million smart cards that are now already in use. Half of these are phone cards, another 4 million are cellular phone cards, and the rest range from taxi cards to golf club cards. Many of these cards can be re-charged from cellular phones, a major benefit given the high growth of the mobile telecommunications market. In fact, an increasing number of South Africans are actually using their WAP-enabled cellular phones to purchase products and services -- cellular phone-based E-Commerce transactions increased by 50 percent in the second quarter of 2000, and volumes increased by 30 percent.[42]

There is currently little regulation of the Internet or E-Commerce

South Africa is just beginning to officially determine the regulatory regime in which E-Commerce should operate, although the country is probably the furthest along on the African continent. A process is underway to set forth possible new legislation pertaining to E-Commerce. The South African Department of Communication has established nine working groups comprised of industry representatives, government officials, and members of the public. These working groups are examining the following issues:

- Security and privacy;
- Taxation and customs;
- Intellectual property;
- Infrastructure;
- Electronic payment systems;
- Internet governance and domain names;
- Education and awareness;
- Technical standards.

A Green Paper setting forth positions on these areas was released on November 20, 2000, with a white paper to be finalized in early 2001. Specific legislation to address these issues is not expected until early- to mid-2001. A web site is available (www.ecomm-debate.co.za) which provides information on the nine working groups, a discussion paper on E-Commerce policy from the South African Department of Communications, and a report that reviews current law and identifies potential barriers to the development of E-Commerce.

The South African government is aware of the economic importance of E-Commerce and is not likely to enact legislation that will greatly stifle its growth. Working group recommendations and statements to date have generally stressed the importance of market forces and consumer demands over new government regulations. However, the government will need to revisit and update existing laws in order to accommodate electronic business activity. For example, current laws dealing with contracts are inadequate and do not specifically address e-documents. Also, it is unclear how current trademark law applies to Internet domain names. According to South African law firm Edward Nathan Friedland, the following six acts must be reviewed in order for E-Commerce to be accorded the intellectual property protection required for its further development:

- Merchandise Marks Act of 1941;
- Counterfeit Goods Act of 1997;
- Business Names Act of 1960;
- Trade Marks Act of 1993;
- Copyright Act of 1978;
- and the Intellectual Property Laws Amendments Act of 1998.

For more, please refer to the regulations section above.

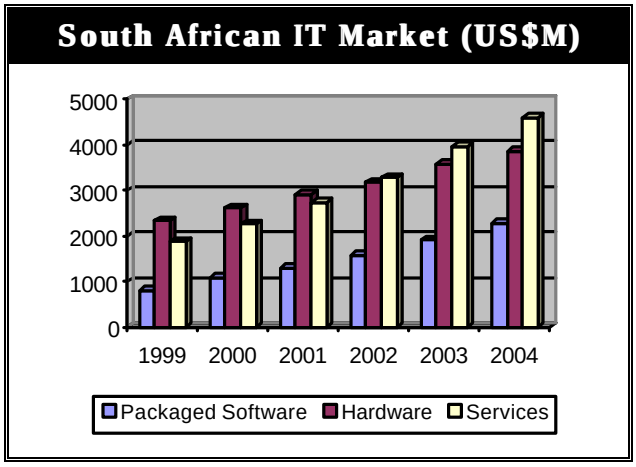
OPPORTUNITIES

There is great potential in the South African IT market. The local corporate sector is several years behind the U.S. and Europe and eager to

[42] *Ibid.*

upgrade their systems and processes. Being "world-class" and competitive characterizes the South African approach to IT use and implementation. American technology companies and products are highly regarded and considered the best in the world.

South Africa is a cost-sensitive, price-driven market with a high technology uptake. Value for money is an important consideration in the South African market. For example, computer systems based on Intel's lower-priced Celeron chip have a larger share of the PC market than their higher-priced Pentium processor, the reverse of the U.S. market. Technology use and adoption is far greater among corporate and government users than for the home consumer. Industry observers estimate that South African IT adoption and trends lag behind the U.S. by 18 - 24 months and map well to trends in Western Europe.



Source: IDC *Blackbook 2000*

In 1998, there were 4.74 PCs per 100 South Africans, which is similar to countries like Chile (4.82) and Greece (5.19) but far below the ownership rate of 50 PCs per 100 Americans. Sales of PCs in South Africa grew by 12 percent in 1999, driven by increasing use of the Internet, a growing small business sector, an influx of low-cost PCs from Asia, and the growing popularity of notebooks and laptops. Mobile computing sales rose by 9.1 percent in 1999, with growth of 33 percent in the final quarter of that year. Leveraging its brand and direct business model, U.S.-based Dell Corporation moved into the top five vendors in South Africa with 35 percent revenue growth in 1999. Forecasters expect the PC sales expansion to continue. Johannesburg-based IT research company BMI-T predicts double-digit compound annual growth for the entire PC sector until at least 2003.

Growth in the software and services segment has been driven by continued corporate IT outsourcing, network (Internet and intranets) implementation, and integration of Enterprise Resource Planning (ERP) products. The IT services area is expected to expand as companies begin to deploy more sophisticated systems and infrastructure while scaling down internal IT support and service functions. The next generation of applications that should continue to fuel growth includes E-Commerce, supply chain management, customer relationship management (CRM), and knowledge management.

The South African IT market is dominated by a relatively small number of large companies. For example, just four companies -- M-Cell, Dimension Data, Comparex, and Datatec -- account for 70 percent of the $23 billion IT market capitalization on the Johannesburg Stock Exchange.[43] Several of these local companies have partnered with American IT firms, such as Datatec and UUNet's joint ownership of UUNet SA, for instance. Other U.S.-based companies with a large South African presence and local subsidiaries include Compaq, IBM, Lucent, Hewlett-Packard, and Microsoft.

Networking equipment sales are soaring

The Internet boom is pushing sales of networking equipment. Sales of switches, hubs, routers, and other equipment grew by more than 48 percent in 1999 as increasing numbers of South African homes and businesses got online. The growing popularity of E-Commerce, call centers, voice-over-IP, and multimedia applications like video

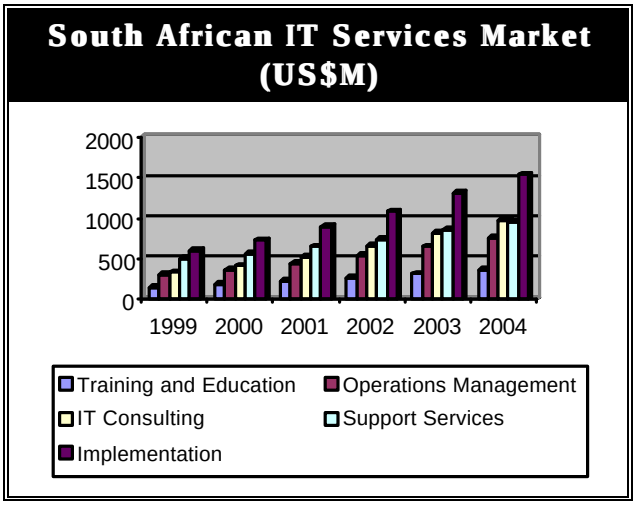
[43] SAITIS *Survey of the IT Industry and Related Jobs and Skills in South Africa, January 2000* (http://www.saitis.co.za).

conferencing are also contributing to sales growth. LAN switching equipment sales rose nearly 114 percent in 1999 and now accounts for over half of all networking equipment revenues. Sales of hubs grew 12.9 percent in 1999 but growth is predicted to slow down as companies increasingly prefer LAN switches for their higher performance and decreasing cost. Router sales grew 12 percent with solid growth expected in the next several years. Strong growth is also occurring in the WAN equipment market, which expanded by a robust 52.4 percent in 1999.

Cisco is the undisputed leader in the South African networking equipment market with a 33 percent share of all the revenues in this sector. The company dominated the router space with nearly 78 percent of the market and also had 43 percent of LAN switching sales. In second place was another American company, 3Com, which had 1999 revenues representing nearly 16 percent of the networking equipment market. 3Com was particularly strong in LAN switching equipment, controlling 26 percent of the market with sales growth of 527 percent in 1999.

IT / Internet services are a strong growth area

South Africa is likely to experience a boom in the IT / Internet services market in the next few years as companies scramble to upgrade their E-Commerce capabilities and integrate the Internet with their overall business operations. These large-scale projects will require South African corporations to seek the assistance of outside service providers. This is a development that will trail the United States by several years and presents an opportunity for U.S. companies to offer consulting, implementation, and operations services in the South African as that market becomes hot. Companies with competencies in systems integration, interactive design, IT, telecom, or management consulting will do well in this area. It is projected that non-access (ISP) Internet service revenues will be double that of access revenues by 2003.



Source: IDC *Blackbook 2000*

The online banking space could be a growth area

The financial sector has been one of the leading drivers of online technologies and B2C payment mechanisms in South Africa. There has been full online banking in South Africa since 1997 and awareness is high. A Webchek survey showed that 90 percent of Internet users were aware of online banking, although four in ten have yet to visit any of the online banks' Web sites. Still, the percentage of Web users that bank online increased from 32 to 41 percent between March and November 1999. There are approximately 340,000 users of online banking. Although currently most users of online banking are white South Africans, the legalization of "underground" lending services in black areas has created a nascent banking infrastructure in previously underserved communities. Online financial services could be one of the first areas to be truly accessible to all of South Africa's consumers.

SMEs will be a key market

Small- to medium-sized enterprises (SMEs) will also be an important growth area. According to the South Africa Department of Trade and Industry, small businesses employ nearly 44 percent of private sector workers and contribute an estimated 32.7 percent to the country's GDP. Small businesses are continuing to expand and upgrade their office technologies. This market segment is relatively underpenetrated, has faster

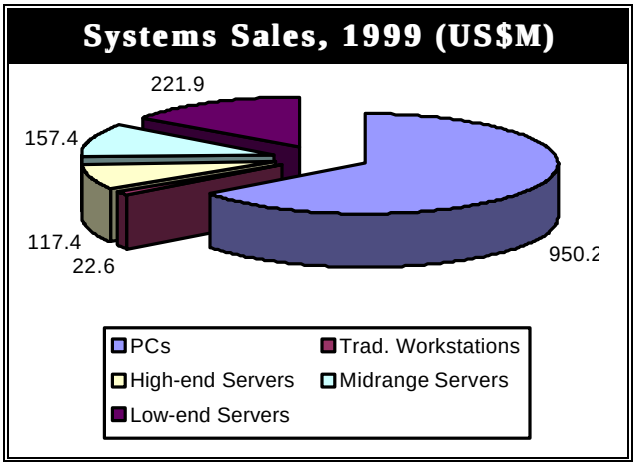
upgrade cycles, fewer network issues, and growing levels of technology awareness vis-a-vis the large corporate sector.

Nearly 40 percent of SMEs will be using some form of E-Commerce between themselves and their suppliers or customers by the end of 2000. Even very small companies (50 employees or less) are likely to start using E-Commerce in the near future -- at least 87 percent will be online by 2001. In the United States by comparison, 61.5 percent of small companies were connected to the Internet in 1999.

A recent survey of SMEs by BMI-T showed that 60 percent felt the Internet was a strategic business imperative for their company, and 75 percent admitted that they had yet to really start exploiting opportunities created by the Internet. Nearly 42 percent of the SMEs surveyed indicated that they would be spending significantly more on their IT budgets for 2000. At least 16 percent of the businesses using E-Commerce have already had some return on their investment. The research also showed that there is little understanding among South African SMEs of the difference between vendors and distributors, and that in general SMEs prefer smaller resellers. Most of these businesses also have no legacy systems to provide compatibility with, posing a green field opportunity for U.S. distributors and VARs.

SMEs are also buying more computers…

Sales of PCs are forecast to rise 12 percent in 2000 after Y2K fears led to only 5.3 percent growth the previous year.[44] Solid growth in this sector is expected to continue as Internet usage and accessibility grows. Falling prices on computers are also driving PC market expansion. For example, notebooks and other portable computers are gaining in popularity with SMEs as their price points fall and performance increases.



Source: IDC *Blackbook 2000*

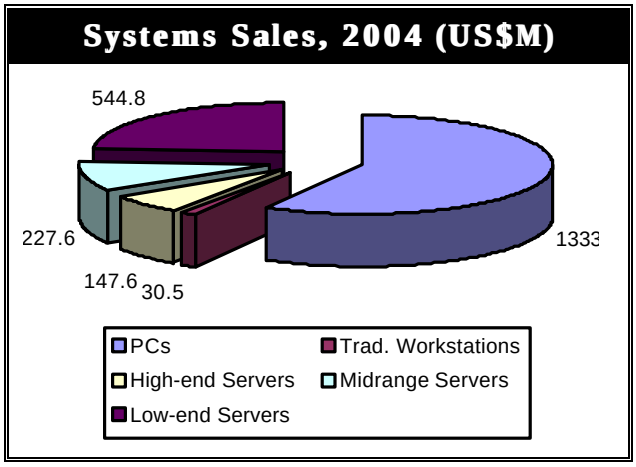
Mobile computing sales rose 9.1 percent in 1999 with an increase of 33 percent in the final quarter of 1999 alone. Major growth in information appliances -- WAP-enabled devices, PDAs, Internet gaming consoles, web terminals, etc. -- is also predicted. American firms like Dell and Compaq are enjoying robust PC sales but the leader in the South African PC market continues to be local company Mustek, which has been the market leader for the last eight years.

...and servers too

Many of the same factors behind the explosive growth in PC sales are also propelling the PC server sector in the SME market. Growing awareness of E-Commerce, falling prices, and emerging ISP and ASP markets led to a 53 percent increase in PC server sales in 1999 and similar growth is expected for 2000.[45]

[44] BMI-TechKnowledge (http://www.bmi-t.co.za).

[45] *Ibid.*



Source: IDC *Blackbook 2000*

Companies are not only buying more Internet and application servers, but they are also demanding richer technology such as two-way and four-way servers based upon the new generation of Intel Pentium III and Xeon processors. While U.S. firms like Compaq, Dell, and IBM are still among the sales giants in this category, unbranded or "white box" PC servers are beginning to grow in popularity in the price sensitive SME space as local vendors become increasingly competitive.

The consumer market is not as strong

Cost is still the primary factor holding back sales and growth in the general consumer market. Most older South Africans, age 50 or over and empty nesters, are generally not amenable to PC purchases. This is due to less disposable income, a fear or apathy towards technology, and a lack of perceived benefits. The best market for consumer sales is in the 35-49 year old age group, who have children at home and a household income in the range of $1666 - $2500 per month. Of this group, cost is the major inhibiting factor to both PC purchases and Internet access. Nearly two-thirds of the people who have PCs at home are still not connected to the Internet.[46]

Remember to build relationships on the ground and think long-term…

South Africa is a market in which business-to-business relationships are extremely important. While many U.S. companies in South Africa do business through value-added resellers or distributors, it is still critical to develop and maintain relationships with local companies. American companies interested in South Africa should also be focused on the long-term potential of the market. Loss on initial investment or market entry is not uncommon. Companies looking at setting up a local presence must allocate for possible loss in their entry strategies.

… and also look at the region as a whole

South Africa also serves as the export springboard for many companies into the rest of Africa, particularly countries in the Southern African Development Community (SADC) such as Botswana, Namibia, Tanzania, and Mauritius. Other sub-Saharan markets like Kenya and even the Gulf States and India can be served from South Africa. Over 199 million people live in the SADC area, which had a combined GDP of $464 billion in 1999.[47] In 1998, U.S. exports to SADC countries totaled approximately $4.4 billion, with growth and investment in this region expected to continue.[48]

Tailor the solution to the market

Bandwidth limitations, skills shortages, and resource constraints present an opening for vendors offering alternative technologies. Thin-client products, which are stripped-down PCs with processing and storage power on a central server, have great potential in South Africa, as this keeps the limited supply of skilled workers at the center and cuts down on costs.

Internet appliances (or Internet-in-a-box) can be made to be accessible to someone with almost no technical skills. These incorporate e-mail service, disk storage, and an intuitive user-

[46] Webchek news release (http://www.webchek.co.za).

[47] CIA *World Factbook 2000* (GDP are PPP figures)

[48] South Africa Country Commercial Guide 2000.

interface and are aimed at the small business user. Various companies, including several major U.S. vendors, already have such offerings in South Africa.[49] Similarly, PDA-type devices that can be used on loading docks, in parcel delivery, and other site-based areas minimize training requirements and are appropriate for the South African market.

The government is a major IT customer

Government tenders and contracts could be a solid business area for assertive U.S. companies. Public sector spending accounts for between 40-60 percent of all IT sector revenues in South Africa. The South African State IT Agency (SITA) is the parastatal entity formed in 1999 responsible for handling national government procurement of IT products and services. The latest tenders can be found at their web site: http://www.sita.co.za.[50] The following steps should generally be followed when bidding for a SITA tender:

1. Register with SITA as a supplier;
2. Select the appropriate tender in either the SA Government Gazette or from the SITA web site;
3. Pick up the relevant documentation from SITA;
4. Attend the compulsory meetings;
5. Submit a bid.

Participate in BEE in order to succeed

Foreign companies with long-term ambitions in South Africa and a desire to sell to the government must incorporate strategies to involve Black Economic Empowerment if they want to do well. Black-owned companies are given special consideration and favored in government contracts, so it is recommended that U.S. companies interested in submitting bids partner with local majority-owned companies. The appendix contains a list of Black Empowerment companies in South Africa involved in the IT or telecommunications sector.[51]

Sources of assistance

South Africa's Department of Trade and Industry (DTI) has introduced an incentive scheme as part of the Small / Medium Manufacturing Development Program (SMMDP). Incorporated entities as well as sole proprietorships and partnerships (excluding trusts) qualify for the incentive package and may apply for assistance. The program provides for an establishment grant payable for three years on qualifying assets and a profit / output incentive payable for an additional year. The incentive package also provides for a foreign investment grant up to a maximum value of $50,000. This assistance is only provided with an initial maximum investment of up to Rand 3 million in qualifying assets per enterprise per project. All incentives are offered on a basis that does not discriminate between national and foreign investors.

Other DTI incentive programs include:
Industrial Investment Incentives

- Tax incentives
- Industrial development finance incentives
- Regional industrial development incentives
- Industrial export incentives
- Import tariff protection and tariff relief
- Development programs for specific industries
- Competitiveness fund
- Short-term export finance guarantee facility
- Medium-term Loan Financing

Additional sources of assistance include the state-owned Industrial Development Corporation, which provides loans at low interest rates for manufacturing companies that create jobs or are entrepreneurial concerns. The IDC also gives venture capital for small, high

[49] African Business *"IT Africa" December 2000* cites UK-based Equimet's NetPilot product ($2800) and Intel's inBusiness Small Office Network ($2000).

[50] See appendix for contact information for Office of the State Tender Board, where more information on tender requirements may be found.

[51] Luisa Dos Santos , U.S. Commercial Service, South Africa

technology companies. Another government-supported body which provides assistance is Technifin, which was formed with the purpose of financing and supporting the commercialization of new technology and products. Technifin is a joint venture between the IDC and the South African Inventions Development Corporation (SAIDCOR). All innovations that improve existing technology are considered. Once an idea or innovation has been accepted due to economic merit, Technifin also provides managerial inputs in order to carry the project through successfully.

Please refer to the South Africa Country Commercial Guide for more information on these and other programs.

Contacts for more information on customs requirements and rules, finding agents / distributors, and the U.S. Embassy are in the appendix.

EXCHANGE RATE USED IN THIS REPORT: US$ = 6 RAND
The South African Rand on November 13, 2000 was at US$ = 7.76 Rand.
It is not expected to rise significantly in the foreseeable future.

CHAPTER 4: THE ROLE OF THE U.S. DEPARTMENT OF COMMERCE

INTERNATIONAL TRADE ADMINISTRATION

(http://www.ita.doc.gov)

The mission of the U.S. Department of Commerce's International Trade Administration (ITA) is to assist U.S. companies export products and services and compete in foreign markets. Two ITA units responsible for export promotion are Trade Development (TD) and the U.S. and Foreign Commercial Service (US&FCS).

TRADE DEVELOPMENT [52]

ITA's Trade Development unit is the Commerce Department's link to U.S. industry. TD provides industry and market analyses, export promotion services, advocacy for U.S. companies bidding on foreign government contracts, and support for trade negotiations. This unit offers an array of services to help small businesses increase their export potential.

Industry Expertise. TD's industry expertise encompasses nearly all U.S. business sectors.[53] Industry sector specialists provide U.S. firms with information and analyses on domestic and foreign industry trends; foreign market conditions and opportunities for specific products or services; general exporting advice; information on foreign market tariffs and non-tariff barriers, and regulations; business and cultural practices; and advocacy assistance.

TD's industry expertise is also the primary source used by the President and the Office of the U.S. Trade Representative (USTR) in trade negotiations. TD's industry analyses, close work with industry representatives, understanding of issues such as restrictions on market access and product standards and testing, and knowledge of trade data help negotiators understand business priorities and problems and develop trade agreements that provide maximum benefit for U.S. firms. TD industry experts also help monitor and enforce foreign governments' compliance with trade commitments, working with other ITA units, including the USFCS and Market Access and Compliance, and USTR.

TD's IT and telecommunications industry-focused offices are the Office of Information Technologies (OIT), the Office of Telecommunications Technologies (OTT), and the Office of Electronic Commerce (OEC).

Office of Information Technologies

OIT focuses on the following IT industry segments: computers and peripherals, software, networking equipment, Internet technologies, and E-Commerce technologies.

OIT actively supports U.S. IT firms' efforts to expand their business overseas. OIT industry specialists track the growth and competitiveness of domestic and foreign IT industries; counsel U.S. businesses on overseas market conditions and the practical aspects of exporting their products; identify market barriers as they affect IT exports; and work closely with USTR to negotiate the removal of these barriers.

OIT export promotion activities include trade missions, trade fairs, catalog shows, and technical seminars that introduce U.S. businesses to potential partners and IT end-users overseas.

OIT staff compile and disseminate detailed information and analyses on their IT industry sectors. Each year, industry specialists profile

[52] More information on Trade Development, including information on its services and industry specialist contact information, can be found at http://www.ita.doc.gov/td. Selected IT and telecommunications TD contacts are listed in the Appendix.

[53] Except agriculture, which is the responsibility of the U.S. Department of Agriculture.

these industries in the Department of Commerce/McGraw Hill publication *U.S. Industry and Trade Outlook*, describing current and future IT industry and market trends on a domestic and global basis. These specialists also continually expand and update the OIT web site with information on foreign markets and regulations, U.S. and foreign policies that affect IT exports, trade events, and additional government and private-sector resources. OIT distributes a free electronic newsletter highlighting trade leads, partnering opportunities, and trade events.

In 2000-2001, OIT will be involved in a number of activities, including: focused market research on Asia; disseminating information on partnering opportunities in Europe; distributing its IT Management Planning Tool, which helps small enterprises assess their IT usage and e-business readiness; developing an internationally focused web site to connect buyers and sellers of U.S. IT products and services; continued monitoring of computer-related trade agreements; and continued emphasis on a strong overall E-Commerce focus in its trade promotion activities.

To obtain more information, including a list of upcoming OIT-supported trade events, or to locate OIT trade specialists, contact:

Office of Information Technologies (OIT)
U.S. Department of Commerce, Room 2806
14th Street & Constitution Avenue, N.W.
Washington, D.C. 20230
Tel: (202) 482-0572
Fax: (202) 482-0952
http://ExportIT.ita.doc.gov

Office of Telecommunications Technologies
OTT's mission is to support the growth and competitiveness of the U.S. telecommunications equipment and services industries in foreign markets.

OTT provides business counseling to U.S. telecommunications firms seeking to enter specific markets by developing and disseminating information on the telecommunications market conditions in foreign countries based on information from US&FCS (see fuller description of US&FCS services on the following pages) and a wide range of other industry resources.

OTT promotes international trade and investment opportunities for the U.S. telecommunications industry by sponsoring events that offer direct contact with foreign government and industry officials. OTT, in coordination with other ITA divisions and U.S. government agencies, also acts as an intermediary between U.S. firms and foreign government officials to provide advocacy support for U.S. bidders on foreign public projects and to reduce or remove barriers that limit U.S. telecommunications firms' access to foreign markets. The office works closely with USTR on trade negotiations and other efforts to open and liberalize foreign markets to U.S. telecommunications equipment and services exports, as well as on monitoring the implementation of bilateral and multilateral telecommunications agreements.

OTT conducts market research and statistical analysis of the domestic and international telecommunications industry, prepares a variety of trade and industry reports, including telecommunication trade statistics and foreign market guides. The office distributes a series of free electronic newsletters delivering up-to-date information on foreign market opportunities and industry information to U.S. subscribers. OTT also prepares the telecommunications chapters of the *U.S. Industry and Trade Outlook*. In 2000, the office also co-organized the Latin American Telecommunications Summit (LATS) held in Peru in March 2000 and sponsored a trade mission to Chile.

To obtain more information, including a list of upcoming OTT-supported telecom events, or to locate OTT trade specialists, contact:

Office of Telecommunications Technologies (OTT)
U.S. Department of Commerce, Room 4324
14th Street & Constitution Avenue, N.W.
Washington, D.C. 20230
Tel: (202) 482-4466
Fax: (202) 482-5834
http://telecom.ita.doc.gov

Office of Electronic Commerce
The Office of Electronic Commerce (OEC) provides information, business counseling, and export assistance services to U.S. firms seeking to enter specific foreign E-Commerce markets by developing and disseminating information on the electronic commerce market conditions in foreign countries. OEC also conducts general trade and policy analysis and research, including analyzing foreign countries' E-Commerce laws and initiatives and comparing them to US policy requirements.

OEC provides support for ITA's ongoing e-commerce export promotion initiative. This initiative seeks to expand U.S. exports, bring small business exporters into the global economy, and engage our trading partners in E-Commerce issues. The focus is to connect U.S. businesses to the new digital economy. OEC participates in fostering the right policy environment by focusing on keeping both the Internet and foreign markets open to private sector driven global growth. This is accomplished by participating in various fora, such as the USG's Interagency Working Group on Electronic Commerce, the Organization for Economic Cooperation and Development (OECD), the World Trade Organization (WTO), European Union, Asia Pacific Economic Cooperation (APEC) and Free Trade Area of the Americas (FTAA). This effort also includes overseeing the Administration's E-Commerce Joint Statements with other governments, managing the Industry Functional Advisory Committee on Electronic Commerce (IFAC-4), as well as participating in formal as well as informal policy dialogues with other nations. OEC tries to determine how to cope with the changes taking place and ensure that the policy infrastructure is in place to enable business, trade and investment to take place as efficiently as possible in the digital economy. We also provide various technical services, such as videoconferences, to bring together government policy and industry experts on various E-Commerce issues.

To obtain more information, or to speak with an E-Commerce Trade Specialist, contact:

Office of Electronic Commerce (OEC)
U.S. Department of Commerce, Room 4324
14th Street & Constitution Avenue, N.W.
Washington, D.C. 20230
Tel: (202) 482-2959
Fax: (202) 482-5834
http://www.ecommerce.gov

Trade Information Center. TD's Trade Information Center (TIC) is an excellent first stop for new-to-export companies seeking export assistance from the federal government. TIC trade specialists 1) advise exporters on how to find and use government programs; 2) guide businesses through the export process; 3) provide country and regional business counseling on standards and trade regulations, distribution channels, trade opportunities and best prospects for U.S. companies, foreign import tariffs/taxes and customs procedures, and common commercial difficulties; 4) provide information on overseas and domestic trade events and activities; and 5) provide sources of public and private export financing. TIC trade specialists also advise exporters how to access reports and statistics from the computerized National Trade Data Bank (NTDB) and direct them to state and local trade organizations that provide additional assistance. To contact the TIC, call 1-800-USA-TRAD(E); fax (202) 482-4473; e-mail tic@ita.doc.gov; or visit its website: http://tradeinfo.doc.gov.

Trade missions and events. Working together with the private sector and the US&FCS, TD industry experts help plan, organize, and recruit for trade events, including high-level executive missions with the Secretary and the Under Secretary of Commerce. Industry-specific trade missions and events are listed on individual offices' web sites.

Advocacy Center. The Advocacy Center supports U.S. businesses of all sizes as they compete for projects overseas. Whether a company is small, medium, or large, the Center aims to ensure that when these companies participate in international tenders they are treated fairly and that their proposals are evaluated on technical and commercial merits. The Advocacy Center marshals the resources of 19 U.S. Government agencies in the Trade Promotion Coordinating Committee and U.S. officials stationed at our embassies and consulates around the world. Advocacy assistance can include a meeting between a key foreign official and a U.S. government official, a phone call to a high-level foreign official, a timely letter to a foreign government decision-maker, or a Cabinet or sub-cabinet level trade mission to a foreign country. Advocacy support is a means to promote our country's economic well-being by leveling the playing field. Since 1993, the Advocacy Center has helped 110 SMEs win foreign government contracts valued at more than $2.4 billion. In addition, as suppliers or subcontractors to larger U.S. companies' overseas projects, thousands of U.S. SMEs benefit indirectly from the Advocacy Center's services. For more information, visit the Center's website at http://www.ita.doc.gov/td/advocacy.

Small Business Program. The Small Business Program is ITA's focal point for trade policy issues concerning SMEs. The Program brings the small business point of view to international trade policy discussions, primarily through the Industry Sector Advisory Committee on Small and Minority Business for Trade Policy Matters (ISAC-14, see Industry Consultations Program discussion below), the only advisory committee to the U.S. government on small and minority business export concerns. The Small Business Program also provides outreach to and plans events for small, women-owned, and minority-owned firms.

Industry Consultations Program. Industry has a voice in U.S. trade policy formulation through the Industry Consultation Program (ICP). The ICP is comprised of 17 Industry Sector Advisory Committees on Trade Policy Matters (ISACs), representing 17 industry sectors of the U.S. economy, including IT, and small and minority businesses. It also has four Industry Functional Advisory Committees on Trade Policy Matters (IFACs), that address cross-cutting issues affecting all industry sectors– customs, standards, intellectual property rights, and E-Commerce. Advisors on these committees have direct access to trade policymakers at the U.S. Department of Commerce and USTR, and develop their industry's positions on U.S. trade policy and negotiation objectives.

The committees address market access problems; tariff and non-tariff barriers to trade; discriminatory foreign procurement practices; the information, marketing, and advocacy needs of their sector; and other trade issues. Committee members are executives and managers of U.S. manufacturing or service companies involved in international trade or are trade association executives. For more information, see http://www.ita.doc.gov/td/icp.

Export Trading Companies and Trade Intermediaries. The Office of Export Trading Company Affairs (OETCA) promotes the formation and use of export trade intermediaries and the development of long term joint export ventures by U.S. firms. OETCA administers two programs available to all U.S. exporters or potential exporters. The Export Trade Certificate of Review program provides antitrust protection

to U.S. firms for collaborative export activities. The U.S. Exporters' Yellow Pages™ publication is designed to assist U.S. trade intermediaries to link up with U.S. producers of exportable goods and services. For more information, see http://www.ita.doc.gov/td/oetca.

Market Development Cooperator Program. The Market Development Cooperator Program (MDCP) is a competitive matching grant program. It builds public-private partnerships by providing federal assistance to nonprofit export multipliers, such as states, trade associations, and chambers of commerce, which are particularly effective in reaching and assisting SMEs. MDCP awards help fund the start-up costs of new export marketing ventures which these groups would not undertake without federal government support. For more information, see http://www.ita.doc.gov/td/mdcp.

THE U.S. AND FOREIGN COMMERCIAL SERVICE (US&FCS)[54]

Also part of the International Trade Administration, the U.S. and Foreign Commercial Service (US&FCS) aims to assist U.S. firms in realizing their export potential by providing expert counseling and advice, information on markets abroad, assistance in locating international contacts, matchmaking services, support of trade events, and advocacy services. US&FCS trade experts are located in more than 70 countries around the world and in major cities throughout the United States.

International Operations. US&FCS offices are located primarily in U.S. embassies and consulates and are valuable connections to overseas markets. US&FCS staff in these countries are industry focused and can offer expert advice on the business practices, cultures, and languages of their specific country or region. They offer numerous products and services to help U.S. firms enter the market or assist companies already established in that country expand their sales. The main activities of these overseas offices are establishing key industry and foreign government contacts, helping match U.S. suppliers with overseas buyers, and organizing or facilitating trade events. Contact information for US&FCS IT and telecommunications market specialists in Botswana and South Africa are in the appendix. In addition, the US&FCS web site, www.usatrade.gov, has contact information for all Africa-based US&FCS trade specialists.

Domestic Operations. These offices provide export counseling and marketing assistance to the U.S. business community through 1,800 trade experts located in 100 U.S. Export Assistance Centers (USEACs). The USEACs work closely with the Office of International Operation's overseas posts to facilitate transactions by linking U.S. suppliers with international buyers or partners. USEACs provide counseling to U.S. firms seeking to expand into international markets. USEACs help firms enter new markets and increase market share by identifying the best markets for their products; developing an effective market entry strategy aided by information generated from overseas offices; advising clients on practical exporting matters such as distribution channels, programs and services, and relevant trade shows and missions; and assisting with trade finance programs available through federal, state and local sectors.

US&FCS and Other DOC Services

Market Research

- **National Trade Data Bank (NTDB)** A "one-stop" source of international trade data collected by federal agencies, the NTDB contains over 190,000 trade-related documents, including market research reports, trade leads, trade contacts, statistical information, country reports, and more. It is available at federal depository libraries, can be purchased on CD-ROM, or can be

[54] More information on US&FCS, including information on its services and industry specialist contact information, can be found at http://www.usatrade.gov/. Selected US&FCS contacts are listed in the Appendix.

accessed through the Internet at http://www.stat-usa.gov. Call 1-800-STAT-USA to order or for more information.

- **Industry Sector Analysis (ISA)**
  ISAs are structured market research reports produced on location in leading overseas markets. Reports cover market size and outlook, characteristics, and competitive and end-user analysis for a selected industry sector in a particular country. ISAs are available on the National Trade Data Bank and on www.usatrade.gov.

- **International Market Insights (IMI)**
  IMIs are short profiles of specific foreign market conditions or opportunities prepared in overseas markets and at multilateral development banks. These non-formatted reports include information on dynamic sectors of a particular country. IMIs are available on the National Trade Data Bank and on www.usatrade.gov.

- **Country Commercial Guides (CCG)**
  CCGs, put out annually by US&FCS market specialists, contain country-specific information on marketing U.S. products and services; leading sectors for U.S. exports and investment; trade regulations, customs, and standards; investment climate; trade and project financing; business travel; and economic and trade statistics. CCGs are available on the National Trade Data Bank and on www.usatrade.gov.

Pinpoint Export Prospects

- **Customized Market Analysis (CMA)**
  A CMA report assesses the market for a specific product or service in a foreign market. The research provides information on sales potential, competitors, distribution channels, pricing of comparable products, potential buyers, marketing venues, quotas, duties and regulations, and licensing or joint venture interest.

- **Trade Opportunity Program (TOP)**
  These are sales leads from international firms seeking to buy or represent U.S. products or services. TOP leads are printed daily in leading commercial newspapers and distributed electronically via STAT-USA.

- **Agent / Distributor Service (ADS)**
  ADS is a customized overseas search for qualified agents, distributors, and representatives for U.S. firms. Commercial officers abroad identify up to six foreign prospects that have examined the U.S. firm's product literature and expressed interest in representing the U.S. firm's products.

Promote U.S. Firms' Products and Services Abroad

- **Commercial News USA**
  This export marketing magazine promotes U.S. products and services worldwide. Disseminated in print to screened agents, distributors, buyers, and end-users and on-line to electronic bulletin board subscribers. Selected portions of Commercial News USA are reprinted in business newsletters in several countries.

- **Gold Key Service**
  This custom-tailored service in foreign markets combines orientation briefings, market research, appointments with potential partners, interpreter service for meetings, and assistance in developing follow-up strategies.

- **Matchmaker Trade Delegations**
  These "match" U.S. firms with prospective agents, distributors, and joint venture or licensing partners abroad.

US&FCS staff evaluate U.S. firms' products and services marketing potential, find and screen contacts, and handle all event logistics. U.S. firms visit the designated countries with the delegation and, in each country, receive a schedule of business meetings and in-depth market and finance briefings.

- **International Buyer Program (IBP)**
  This supports selected leading U.S. trade shows in industries with high export potential. US&FCS offices abroad recruit foreign buyers and distributors to attend the U.S. shows while program staff helps exhibiting firms make contact with international visitors at the show. The IBP achieves direct export sales and international representation for interested U.S. exhibitors.

- **Multi-State Catalog Exhibitions**
  These showcase U.S. company product literature in fast growing markets within a geographic region. U.S. Department of Commerce staff and representatives from state development agencies present product literature to hundreds of interested business prospects abroad and send the trade leads directly to participants.

- **Trade Fair Certification**
  This supports major international industry trade shows providing high-profile promotion of U.S. products. Certification encourages private organizers to recruit new-to-market, new-to-export U.S. exhibitors; to maintain Commerce Department standards for event; and to provide services ranging from advance promotion to on-site assistance for U.S. exhibitors.

The U.S. Department of Commerce's Information and Communications Technology (ICT) Team[55]

The U.S. Department of Commerce's Information and Communications Technology (ICT) Team comprises IT market and industry specialists, from both US&FCS and TD, who work together to share information and provide comprehensive services to support U.S. IT firms' exporting efforts. ICT team members are located in US&FCS Export Assistance Centers in key geographic areas throughout the United States, in US&FCS offices abroad, and in TD IT- and telecommunications-focused offices in Washington, DC.

Members offer all U.S. Department of Commerce export promotion services mentioned above; in addition, the Team's structure and programs aim to meet the specific needs of firms in the IT industry.

Team members' regional presence allows them to be accessible and responsive to the many small- and medium-sized IT firms and firm clusters around the United States. The formal network of IT-focused trade specialists located in the United States and abroad adds value to U.S. IT SMEs, as domestic team members can easily access foreign-based colleagues for the most updated information for U.S. firms on trade leads and quickly changing foreign market opportunities; in addition, domestic team members can provide input to foreign-based colleagues on market research topics of use to U.S. IT firms. Finally, the ICT Team constantly develops new export promotion programs specifically to meet the needs of firms in the rapidly changing IT industry.

ICT Team services currently include the following:

- Reports specific to IT firms' exporting needs, such as a forthcoming report on

[55] For more information on the ICT team, see http://www.usatrade.gov/US/annarbor/ICT_USA.htm, or see the Appendix for contact information.

distribution channels and contacts in selected markets.

- Technology-based services for U.S. firms to reach potential buyers and partners, including international video-conferencing services and virtual trade shows on the US&FCS web site and at large IT trade shows.
- The Show Time program, which allows U.S. IT firms to meet with ICT Team industry specialists at domestic and international trade shows to learn about international sales and marketing opportunities for high-tech products and services, receive country and industry briefings, matchmaking services, and other networking opportunities.
- Coordinated trade promotion activities in partnership with state and local governments, trade associations, and trade show organizers.
- A website with an estimated 2,000 links relating to the information technology industry, expected to increase to 4,000-5,000 links.

APPENDIX

SOUTH AFRICA: DETAILS OF CELL C'S LICENSE APPLICATION

(continued from page 34)

Cell C chose a dual mode, dual band network (the 900 and 1800 frequencies and GSM) to enable nationwide coverage. Cell C plans to use dual band 900/1800 GSM technology in the metropolitan areas, GSM 900 in rural areas, and mobile satellite in remote rural areas. It designed a package of solutions for under serviced areas including community telephone services (CTS), home zones and satellite services. The CTS idea involves establishing more than 50,000 public phones (terminals) in community centers owned by local citizens. (MTN and Vodacom plan to provide a small number of comparable facilities.) These centers are designed to offer a range of information services, such as Internet access, e-mail, computer skills training, printing and scanning, faxing and distance learning. The HomeZone concept envisions discounted tariffs of up to 50 percent offered within certain geographical areas. Telephone services will be offered at discounted prices that would be attractive to the poor. Cell C also intends to provide 5,000 satellite phones to remote rural areas.

Cell C's business plan pays attention to assisting the development of the rural poor. It targets rural children through allocation of bursaries and scholarships. Many of the services and products that Cell C said it would purchase in rural areas, such as cleaning services and consumables, will benefit rural women. Making cellular telephony available in rural areas has the potential to boost tourism. A communications infrastructure will make it possible for more rural communities to become involved in eco and other tourism initiatives. Extending cellular networks to rural areas will provide access to a variety of emergency and other services, such as medical services, police, health, water and electricity providers and disaster management services. Farmers have had to travel to a town to obtain certain information or expert advice or wait for the visit of an agricultural extension agent. That information could be delivered right to the farmer's field via cellular telephony.

Initially, Cell C has planned to offer services the two incumbents are providing, such as mobile fax, voice mail, call waiting and holding, caller ID, international roaming, ticket booking, alarm system, directory services, and short messaging service. Then it would introduce data transmission service offerings that come with the entry of third generation technologies such as general packet switched radio systems (GPRS) and universal mobile telephone system (UMTS).

With access to the 1800 band, Cell C would be able to support applications requiring heavy usage of bandwidth such as wireless Internet services, high speed data transmission, cellular broadcasts, bank account management, video telephony, video games, music and information on demand. A combination of pre and post-paid accounts, where family and group calls could be held in one account will be featured. Cell C is also planning to use new distribution channels for its products.

CONTACTS: BOTSWANA

U.S. DEPARTMENT OF COMMERCE
U.S. AND FOREIGN COMMERCIAL SERVICE

The U.S. Embassy in Botswana is responsible for providing U.S. SME exporters with the full range of Commercial Service assistance in researching, entering, and expanding within Botswana.

Ms. Kathryn Flachsbart
Commercial Officer
P.O. Box 90
Gaborone, Botswana
Phone: (267) 353-982 ext. 5323 or 5321
Fax: (267) 356-947
E-Mail: uscomml@mega.bw

BOTSWANA GOVERNMENT

Botswana Exporter Development and Investment Authority (BEDIA)
Mr. Chad Bhadain
Chief Executive
P.O. Box 3122
Gaborone, Botswana
Phone: (267) 581-931
Fax: (267) 581-941
E-Mail: bedia@bedia.bw

Department of Customs & Excise
(Customs Requirements and Rules)
Mr. Ken Morris
Director
Private Bag 0041
Gaborone, Botswana
Phone: (267) 322-855
Fax: (267) 322-781

Botswana Telecommunications Authority
Private Bag 00495
Gaborone, Botswana
Phone: (267) 357-755
Fax: (267) 357-976
E-mail: bta@info.bw

Botswana Telecommunications Corporation
http//:www.btc.bw
Megaleng
Khama Crescent
PO Box 700
Gaborone, Botswana
Phone: (267) 358-000
Fax: (267) 375-195
E-mail: pr@btc.bw

LOCAL ASSOCIATIONS

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Botswana Chamber of Commerce and Industry
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U.S. AND FOREIGN COMMERCIAL SERVICE

The US&FCS Ronald H. Brown Commercial Center in Johannesburg, as well as satellite offices in Durban and Cape Town, is responsible for providing U.S. SME exporters with the full range of Commercial Service assistance in researching, entering, and expanding within South Africa.

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SOUTH AFRICA GOVERNMENT

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http://www.sita.co.za
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Mr. Piet van Heerden
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Phone: (27 12) 482-2927
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E-Mail: tenders@sita.co.za

Department of State Expenditure
(Information on Government Tender Requirements)
Office of the State Tender Board
Private Bag X845
Pretoria, South Africa 0001
Phone: (27 12) 315-5111
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Department of Trade and Industry
http://wwwdti.pwv.gov/dtiwww

(Import Policy and Tariffs)
Mr. D. J. Jordaan
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Private Bag X753
Pretoria, South Africa 0001
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(Trademarks, Patents, Design, and Copyright)
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(Joint Ventures / Licensing)
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(Investment Incentive Programs)
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ICASA – Independent Communications Authority of South Africa
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http://www.telkom.co.za
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Private Bag X881
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Fax: (27 12) 311-4031

Investment South Africa
http://www.isa.org.za
(National Investment Promotion Agency Created by DTI)

South African Reserve Bank
http://www.resbank.co.za
(Foreign Exchange Control Regulations)
Chief, Exchange Control Division
P.O. Box 3125
Pretoria, South Africa 0001
Phone: (27 12) 313-3911
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South African Bureau of Standards
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South African Chamber of Business
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BLACK EMPOWERMENT GROUPS IN THE SOUTH AFRICAN IT SECTOR

New Africa Investments Ltd.

Nature of Business:	The first major black-controlled company to be listed on the Johannesburg Stock Exchange. An investment holding company with significant interests in financial services, media, communications, information technology, and the industrial sector.
Registered Office:	1st Floor, Fulham House, 20 Georgian Crescent, Bryanston Ext. 5, Randburg 2194 P.O. Box 782922, Sandton, 2146 Phone: (27 11) 463-1744 Fax: (27 11) 463-3269

Real Africa Investments Ltd.

Nature of Business:	An investment holding company focused on black economic empowerment initiatives. The company currently has investment in financial services, information technology, food and beverages, health care, and gaming and leisure.
Registered Office:	Real Africa House, 3 West Street, Houghton, 2198 P.O. Box 1522, Saxonwold 2132 Phone: (27 11) 483-2142 Fax: (27 11) 483-2833

Omni Media Corporation Ltd.

Nature of Business: An investment holding company, whose interests cover a broad spectrum of publishing, entertainment, telecommunications, Internet services, and retailing.

Registered Office: 13th Floor, 28 Harrison Street, Johannesburg 2001
P.O. Box 231, Johannesburg 2000
Phone: (27 11) 373-7111
Fax: (27 11) 838-6424

Kunene Technology Ltd.

Nature of Business: The company is a long-term investor in businesses involved in the technology sector where it can add value by active involvement in the affairs of the companies in which it invests.

Registered Office: 4th Floor, South Block Waterview Corner, Ernst Oppenheimer Ave. & Queen Street, Bruma Johannesburg 2100
P.O. Box 59776, Kengray 2100
Phone: (27 11) 616-5232
Fax: (27 11) 616-8245

Siltek Ltd.

Nature of Business: The company is an investment holding company with its subsidiaries and associated companies involved in the distribution of hardware, software, and networking products; and the provision of integrated information technology software, networking, and telecommunications-related services and solutions.

Registered Office: 2nd Floor, 275 Kent Ave., Ferndale Randburg 2194
P.O. Box 56051, Pinegowrie 2123
Phone: (27 11) 784-5541
Fax: (27 11) 784-5549

Hoken Consolidated Investments Ltd.

Nature of Buisness: An investment holding company. The group's four principal areas are telecommunications and information technology, media, interactive gaming, and financial services.

Registered Office: 3rd Floor, James Bolton Hall, 127 Gale Street, Durban 4001
P.O. Box 18881, Dalbridge 4014
Phone: (27 31) 305-5243
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CONTACTS: UNITED STATES

U.S. DEPARTMENT OF COMMERCE
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Office of Information Technologies (OIT)
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TECHNOLOGY ADMINISTRATION
NATIONAL CENTER FOR STANDARDS & CERTIFICATION INFORMATION (NCSCI)
http://ts.nist.gov/ts/htdocs/210/217/bro.htm

Bldg 820, Room 164
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U.S. DEPARTMENT OF COMMERCE
U.S. & FOREIGN COMMERCIAL SERVICE
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http://www.usatrade.gov/US/annarbor/ICT_USA.htm

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Contact Carmela for a list of domestic and foreign ICT Team members.

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Software and Information Industry Association (SIIA)
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RELEVANT AMERICAN CHAMBERS OF COMMERCE ABROAD

The U.S. Chamber of Commerce is the world's largest business federation, representing nearly three million companies, 3,000 state and local chambers, 850 business associations and 87 American Chambers of Commerce abroad. Among other goals, Chambers of Commerce abroad seek to promote bilateral trade, direct investment, technological transfer and other special items of mutual interest between foreign countries and the United States, and to supply U.S. business with placement services and information on trade opportunities and foreign economies.

U.S. Chamber of Commerce Main Web page: http://www.uschamber.com/

American Chamber of Commerce in Southern Africa
Ms. L. Grant
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E-Mail: amcham@yebo.co.za

SELECTED IT- AND TELECOM-RELATED SOUTHERN AFRICAN TRADE EVENTS

African Convergence

Date: January 29-31, 2001
Venue: Park Hyatt Hotel, Johannesburg, South Africa
Organizer: Marcus Evans Conferences
Contact: Hennie Potgieter
Phone: (27 11) 516-1000
Fax: (27 11) 516-1149
E-mail: sales@marcusevanssa.com
Web: http://www.marcusevans.com

Botswana Computing, Communication, and Office Equipment Exhibition

Date: March 28-30, 2001
Venue: TBA
Organizer: AITEC Exhibitions
Contact: AITEC South Africa
Phone: (27 11) 787-4991
Fax: (27 11) 789-5312
E-mail: sasales@aitecafrica.com

Linux Africa

Date: April 24-26, 2001
Venue: TBA
Organizer: AITEC Exhibitions
Contact: AITEC South Africa
Phone: (27 11) 787-4991
Fax: (27 11) 789-5312
E-mail: sasales@aitecafrica.com

African Computing and Telecommunications Summit 2001

Date: July 30 – August 3, 2001
Venue: Sun City, South Africa
Organizer: AITEC Exhibitions
Contact: AITEC South Africa
Phone: (27 11) 787-4991
Fax: (27 11) 789-5312
E-mail: sasales@aitecafrica.com

Telecom Africa 2001

Date: November 12-16, 2001
Venue: Gallagher Estate, Midrand, South Africa
Organizer: International Telecommunications Union
Contact: Piers Letcher
Phone: (41 22) 730 6602
Fax: (41 22) 730 6444
E-mail: piers.letcher@itu.int
Web: http://www.itu.int/AFRICA2001/index.html

Southern Africa Economic Summit 2001

Date: TBA
Venue: Durban, South Africa
Organizer: World Economic Forum
Contact: World Economic Forum - Geneva
Phone: (41 22) 869-1212
Fax: (41 22) 786-2744
E-mail: contact@weforum.org
Web: http://www.weforum.org

Africa Telecom 2002 Exhibition and Forum

Date: March 26-29, 2002
Venue: Gallagher Estate, Midrand, South Africa
Organizer: International Fairs and Exhibitions
Contact: International Fairs and Exhibitions
Phone: (27 11) 476-0022
Fax: (27 11) 476-0027